the CALIFORNIA
RAISIN INDUSTRY

PRICES, RETURNS,
ECONOMIC
ADJUSTMENTS

ECONOMIC RESEARCH SERVICE

MARKETING ECONOMICS DIVISION

U. S. DEPARTMENT OF AGRICULTURE   WASHINGTON, D. C.

PREFACE

This report is the first of two that the U. S. Department of Agriculture plans to publish on marketing problems of the raisin industry. A preliminary, overall view of raisin marketing is available in AMS-204, Raisin Marketing -- Preliminary Economic Highlights, published by the Department in 1957. A subsequent report will analyze the effects of the Federal raisin marketing order.

It would have been impossible to prepare this report without the generous assistance of many persons in industry and Government. The writer is grateful to members of the Fruit and Vegetable Division, Agricultural Marketing Service, the Federal Raisin Advisory Board and Administrative Committee, and the California Raisin Advisory Board for helpful consultations and for data they made available.

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FINDINGS AND THEIR IMPLICATIONS

1. Substantial improvement has occurred since World War II in prices and returns to both raisin producers and raisin packers. Prices per ton to producers have risen; margins to packers also have increased to a somewhat greater degree. Producers' total returns increased, but lagged behind unit returns.

The idea that producers or packers can gain over a period of years only at each other's expense has been weakened. Conflicts of interest between producers and packers remain, but the potentially disruptive problem of relative gains to producers as a group versus packers as a group has been alleviated by gains to each group. This finding is particularly significant because a primary purpose of the Federal raisin marketing order is to improve prices to producers (to approach parity levels).

2. The improvement in returns to producers has been associated with diminishing raisin production. The decline in production decreased the volume handled by packers. It is likely that this tended to create short-run pressure on packers' profits and a short-run conflict of interest between producers and packers.

3. The industry's improvement in returns has been associated with a declining number of raisin producers and packers. The decline has been responsible for some of the gains in returns to remaining producers and packers. Individual packers increased their volume of business (as well as their margins) in the face of an overall decline in the industry's volume. Producer exits from the industry typically have involved sale of grapes in the alternative crush outlet. Exits from the industry have occurred primarily among smaller producers and packers. As a result, raisin production and processing have become more concentrated among larger producers and packers.

Exit of packing firms has played a major role in dissipating short-run conflicts of interest between producers and packers arising from the tendency of diminished volumes to exert pressure on the packers' profit position. However, continued resolution of this problem by exits appears more difficult because the remaining "hard core" of packers are better able to stay in business.

Improved returns to the industry due to exits of firms differ sharply from improved returns as a result of favorable marketing developments. The gains from the former source tended to insulate the industry from changing marketing conditions. But gains from exits cannot be expected to continue.

The higher returns were insufficient to maintain the original number of raisin producers.

4. The industry has relied heavily on Federal Government dollar assistance in the years of excessive supplies and low returns. When the industry began operating under a Federal marketing order, dollar assistance changed from direct purchasing to export subsidy in conjunction with the order. Dollar aid diminished under the order, and none was received in 1955-60. Under the order, dollar aid was intended only to alleviate temporary problems of abnormal supply and to expedite the industry's transition to the order.

5. Growers' prices for raisins have increased substantially more than growers' prices for raisin grapes sold to wineries. Wineries are the major competitor to the raisin outlet in the use of raisin grapes. Price increases and dollar assistance

associated with the raisin marketing order have been accomplished without increasing the number of raisin producers and without attracting additional, price-depressing supplies from other sources.

Gains and benefits to the raisin industry have not been shared to any substantial degree by other segments of the grape industry, notably the winery crush.

The continuing price differential favoring raisins causes the industry to be vulnerable to potentially burdensome surpluses through transfer of supplies from competing outlets and through plantings of new acreage.

A marketing order effectively regulating marketings in the grape crushing industry might decrease the price differential favoring raisins over the crush outlet.

6. Comparative returns to raisin grape growers selling in the raisin outlet and those selling in the winery crush have varied greatly from year to year. This indicates (a) imperfect marketing conditions facing growers, e.g., lack of information, and (b) an imbalanced utilization of grape supplies by the two outlets. Ineffective apportioning of grape supplies tends to increase costs and reduce returns to the raisin and crush industries.

7. Within-season variation in the field and f.o.b. (packer-distributive trade) prices has shown two basic patterns. Heavy, price-depressing crops, associated with volume regulation under the Federal raisin marketing order, have been accompanied by a remarkable degree of within-season price stability, and a virtual price floor. On the other hand, short, extremely high-price (above parity) crops, in the absence or mandatory suspension of volume regulation, have been characterized by within-season price instability and virtual absence of a price ceiling.

Stable within-season field and f.o.b. prices under volume regulation have eliminated much of the basis for disruptive speculative buying and selling.

A fundamental inconsistency exists between (1) short raisin supplies and extremely high prices and (2) effective industry action to increase demand through such policies as merchandising efforts, advertising, and building of confidence of resellers and commercial users in stability of prices and supplies. Occasional years of short supplies and high prices may, over a period of time, depress raisin demand.

8. During 6 successive years (1951-56) when the price-raising program of the Federal marketing order was in effect, the consumer price of packaged seedless raisins in New Jersey increased by 19 percent over the price in 1947-49, while farm value increased by 28 percent. The marketing margin increased by only 15 percent. Consequently, the share of the retail price going to producers increased from 35 to 38 percent. This is in contrast to the general decline in the farmer's share of the consumer's dollar.

THE CALIFORNIA RAISIN INDUSTRY: PRICES, RETURNS, ECONOMIC ADJUSTMENTS

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BACKGROUND AND OBJECTIVES

Immediately after World War II, the California raisin industry experienced severe dislocations in its marketing processes, including burdensome supplies and depressed prices and incomes. From 1947 to 1954, the industry received $48.7 million of Federal assistance in export subsidies and direct purchases, a sum equivalent to 16 percent of total returns to producers in that period. In 1949 the industry adopted a Federal raisin marketing order to cope with its marketing problems. The need for Government dollar aid gradually lessened, and from 1955-60 the industry received no such aid.

Recent developments in the California raisin industry have been studied (1) to determine the effects of industry organization and marketing practices on prices and returns, and (2) to provide information that may be useful in solving problems generated by these developments. This report analyzes industry prices and returns and shows what adjustments have taken place, particularly in the number and size of producers and packers. A second report will consider the effects of the Federal raisin marketing order.

PRICES AND RETURNS TO RAISIN PRODUCERS

Crop-Year Average Returns for all Raisins

Returns per ton.--Following World War II and throughout the 1950's, producers' returns per ton of raisins moved upward, the first sustained gain since World War I (fig. 1 and table 1). Returns per ton in 1947-49 were 140 percent above the 1935-39 prewar level. Returns per ton moved steadily upward in 1951-56 and averaged 28 percent over the 1947-49 average. Short supplies and unusual crop conditions, primarily rain damage, in 1957 and 1958 contributed to extreme price peaks. In 1959-60, with crops of more typical size, returns per ton were $203 -- 19 percent over the 1951-56 average.

Returns per ton following World War II have been highly unstable, because of price peaks in crop years of strong demand and short supplies. Such price peaks occurred in 4 of 15 years (1946-60); prices in 1946, 1950, 1957, and 1958 averaged 69 percent higher than in 1951-56.

The national index of prices paid by farmers, including interest, taxes, and wage rates (table 1), has increased substantially since 1935-39. Accordingly, raisin returns computed in dollars of constant purchasing power (using the "prices paid" index as a crude deflator) have increased at a much slower rate (table 1 and fig. 1). For example, the 140 percent increase in returns per ton between 1935-39 and 1947-49 was only 20 percent in dollars of constant purchasing power. Likewise, the 28 percent increase in 1951-56 over 1947-49 falls to 14 percent, and the 19 percent increase in 1959-60 over 1951-56 falls to 11 percent.

California Raisins

RETURNS TO PRODUCERS

$ PER TON

In current dollars

Averages (SELECTED PERIODS)

In 1910-14 dollars
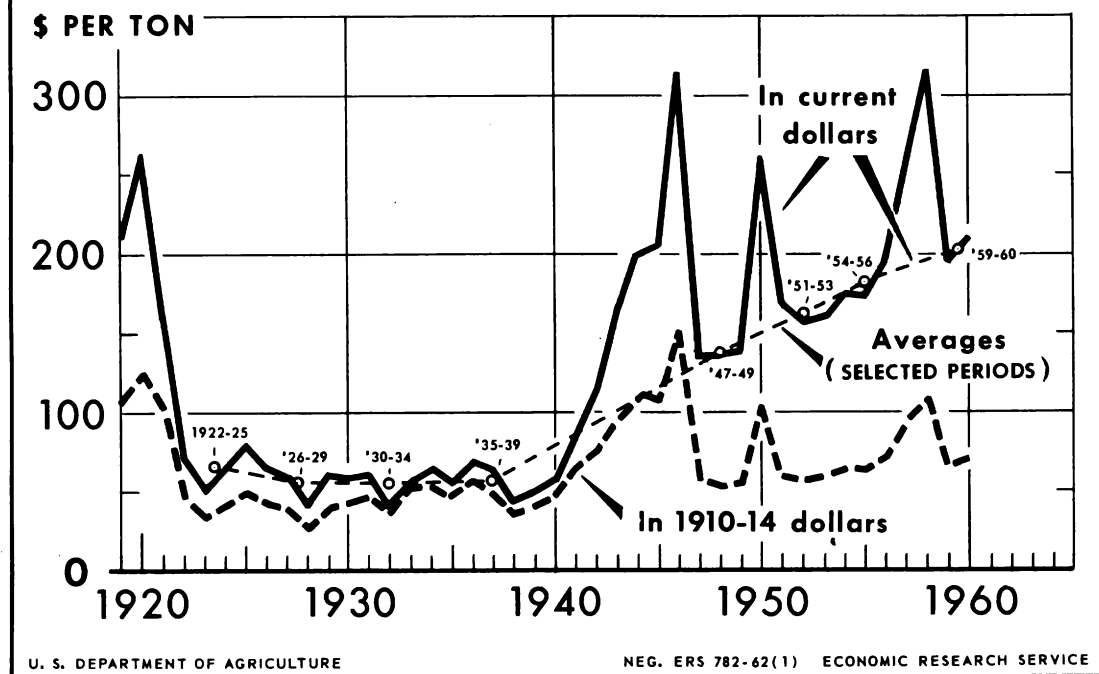
Figure 1

Returns for total crop.--Although total returns for the raisin crop also have risen since World War II (table 1), these gains have lagged behind the increases in returns per ton. In 1951-56, total returns averaged 8 percent over 1947-49, compared to the 28 percent increase in returns per ton. Similarly, in the price-peak years, 1957 and 1958, the increase over 1951-56 in total returns amounted to 33 percent, while returns per ton showed a gain of 69 percent.

Correcting for inflationary forces, total crop returns (in constant dollars) to the raisin industry in 1951-56 actually were 4 percent below 1947-49.

Distribution of returns within the industry.--There has been little or no association between size of raisin production and total returns to producers. On the other hand, producers' returns per ton have shown a close inverse association with raisin production (fig. 2). Years of heavy production have been associated with low returns per ton, while years of light production have been associated with high returns, irrespective of the movement of other marketing variables. The tendency of the 1947-60 relationship to flatten out in years of extremely heavy production may be accounted for by the government assistance program (see fig. 4A).

Figure 3 portrays the relations among raisin production, number of producers and packers, producers' returns per ton, producers' total returns, and packers' margins since World War II. 1/ The following comparative changes provide insight

1/ The packer's margin is the average price packers received per pound of bulk-packed raisins, minus the average price paid to growers for equivalent weight.

Table 1.--Production of California raisins, returns to producers in dollar value for period and equivalent 1910-14 dollars, and index of prices paid by farmers, for selected periods, 1919-60

Period (crop years)	Production	Total returns		Returns per ton		Returns per bearing acre		Prices paid by farmers (1910-14=100)
		For period	1910-14 equivalent	For period	1910-14 equivalent	For period	1910-14 equivalent	
	Tons	1,000 dollars	1,000 dollars 1/	Dollars	Dollars 1/	Dollars	Dollars 1/	Index
1919-21........:	161,500	34,382	17,894	210.00	110.44	246.87	128.18	189
1922-25........:	220,375	14,177	8,966	65.75	41.49	77.71	49.24	158
1926-29........:	257,750	14,551	9,090	56.50	35.29	64.36	40.20	160
1930-34........:	197,800	10,765	8,762	55.88	45.21	64.91	52.11	124
1935-39........:	233,400	12,709	10,130	55.72	44.46	73.01	58.15	125
1941-46........:	267,917	47,229	26,580	179.58	100.21	281.74	156.11	173
1947-49........:	265,500	35,459	14,230	133.67	53.44	226.57	90.61	250
1950...........:	156,000	40,716	15,904	261.00	101.95	365.66	142.84	256
1951-56........:	226,000	38,282	13,683	170.84	61.16	312.29	111.78	280
1951-53......:	254,333	40,796	14,453	160.67	56.99	294.65	104.46	282
1954-56......:	197,667	35,767	12,912	181.00	65.33	329.93	119.09	277
1957-58........:	174,500	50,811	17,522	289.50	99.91	529.13	182.46	290
1957.........:	163,000	43,032	15,046	264.00	92.31	445.90	155.91	286
1958.........:	186,000	58,590	19,997	315.00	107.51	612.36	209.00	293
1959-60........:	213,500	43,281	14,525	203.00	68.11	401.67	134.79	298
1959.........:	222,000	43,512	14,651	196.00	65.99	401.60	135.22	297
1960 2/......:	205,000	43,050	14,398	210.00	70.23	401.73	134.36	299

1/ Averages derived from annual series.
2/ Preliminary.

California Raisins

RELATIONSHIP OF PRODUCER RETURNS PER TON TO TONS PRODUCED
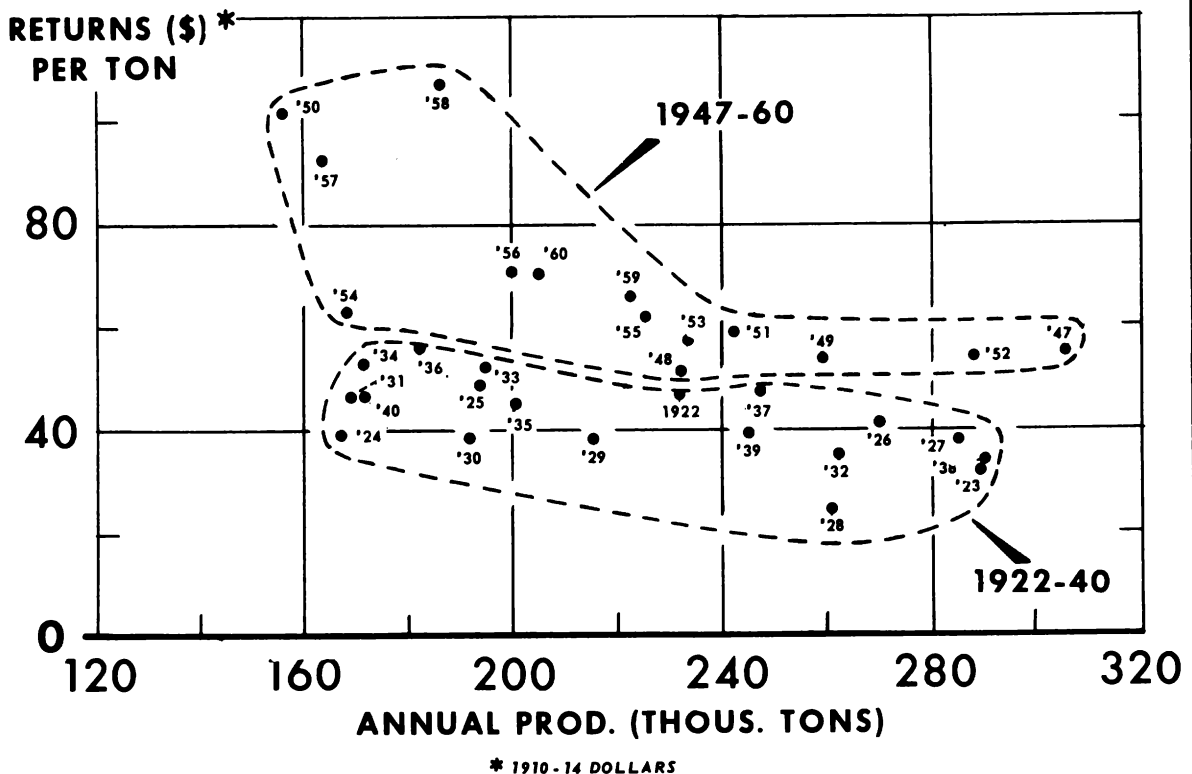
Figure 2

into the changing distribution of returns in the raisin industry: (1) The decline in both total production and number of producers and packers, (2) the increase in producers' returns per ton and packers' margins, and (3) the much smaller increase in total returns. Figure 3 uses returns adjusted for changes in dollar purchasing power to emphasize the relation between total returns, returns to producers per ton, and packers' margins per pound.

These relations imply that since World War II, although total returns to raisin producers have been fairly stable (in constant dollars), they were distributed among a shrinking number of producers and tons produced at an increasing rate of (constant dollar) returns per ton. Since the decline in production resulted from reduction in total acres devoted to raisins, rather than declining yields per acre, the increased returns per ton also imply an increased rate of gross returns on producers' overall investment.

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COMPARATIVE CHANGES IN MARKETING OF CALIFORNIA RAISINS
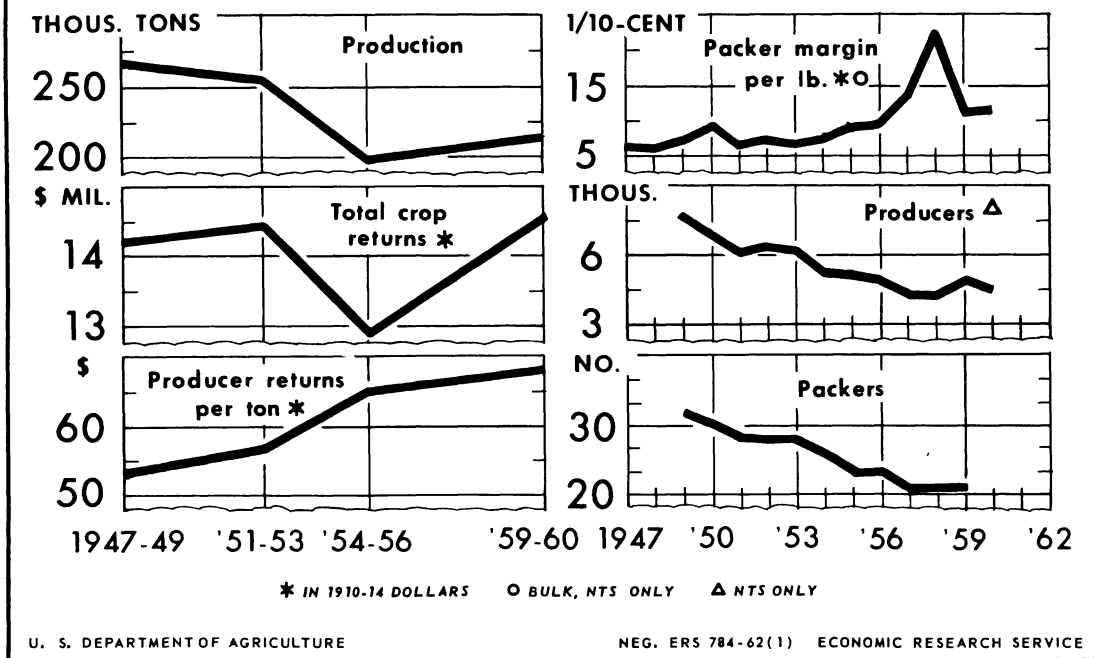
Figure 3

Although increased returns per ton and the presumed increase in gross returns on the raisin investment might be considered favorable developments for producers, the fact remains that fewer raisin producers received these gains. Industry records indicate (see p. 14) that as production declined, a substantial number of producers left the industry. To some extent, the gains achieved by remaining individual producers have been due to the decline in supply resulting from exits from the industry. This development introduces the thorny problem of whether or not the industry is "better off" in response to the industry self-help program initiated in 1949. If the producers would have left anyway (irrespective of the industry self-help program), as a normal economic adjustment, then the gains experienced by remaining producers require no further consideration. On the other hand, if the exits have been in part induced or accelerated by the industry self-help program, then it is necessary to contrast the gains of remaining producers with the changed economic situation of producers who left the industry. A further question is raised by producer exits: What will be the chances of increased returns in future years without continued reduction of productive capacity?

The relations shown in figure 3 also portray an important issue in the distribution of industry returns between producers and packers. Declining raisin production, though yielding higher prices to producers, means declining volume handled by packers. At a given markup, or margin, as determined by market forces, a packer's total net return depends directly on volume processed. Consequently, declining raisin production can reduce net returns of packers if packing margins per unit and number

of packers remain the same. Findings presented later (pp. 41 and 46) indicate that the pressure of declining production on packers was dissipated by a decline in the number of packers and by higher margins.

The Federal raisin marketing order is designed to improve returns per ton to producers (though not to exceed parity levels). But the increased returns per ton to producers have been associated with declining production. Therefore, the pressure of declining production on packers' returns and the process by which the pressure is eliminated need to be considered in relation to the order.

Estimated returns per acre.--An approximation of the trend of returns per acre devoted to raisin production (table 1) has been calculated on the basis of the assumptions (1) that the yield per acre of raisin grapes which are dried varies proportionally with the yield per acre of all raisin grapes, and (2) that the drying ratio is 4 to 1 (4 tons fresh weight equal 1 ton dry weight). The rise in returns per acre since World War II has exceeded the increase in returns per ton. During 1951-56, returns per ton advanced 28 percent above 1947-49, whereas returns per acre increased 38 percent. In 1959-60, returns per ton increased 19 percent over 1951-56 and returns per acre increased 29 percent. Thus, to the price increases have been added the higher yields per acre. Consequently, producers have a basis in experience for strong attachment to higher prices, despite the industry's lagging total sales and total returns associated with rising prices. Even in self-help efforts to increase total sales, producers would probably prefer to avoid techniques that might lower prices.

Financial Assistance by Federal Government

The Federal Government's financial assistance has played a major role in increasing returns to the raisin industry (table 2), particularly in the 2-year period 1947-48, when it constituted 40 percent of producers' total returns. Dollar assistance, amounting to $28.8 million in 1947-48, dropped to $19.9 million in 1949-54 (9 percent of total returns) and to zero in 1955-60.

Since published data on producers' returns include Federal financial assistance, it is informative to focus upon the extent and timing of assistance in relation to returns per ton, per acre, and for the total crop. Three qualifications must be attached to the data shown in table 2 and figure 4:

(1) Dollar assistance was not a simple matter of direct payments to growers. It consisted of export subsidies, direct purchases, wartime consumer subsidies, price-support loans, and payments for transportation, processing, and other handling charges.

(2) The dollar amount of Government assistance is not identical with the net effect of such assistance on returns. For example, without Government assistance, returns might not have been reduced by the exact amount of assistance. Rather, in the absence of assistance, the industry would probably have made compensating adjustments to change the level of returns.

(3) Government financial assistance created a market structure uniquely affecting returns. In 1947 and 1948, Government assistance was by direct purchases, announced early enough to permit growers to shift grape supplies from the winery crush outlet to the supported (and presumably more profitable) raisin outlet. This resulted in a spillover of the benefits of Government support from the raisin industry

Table 2.--Production of California raisins, returns to producers and Government assistance, annually 1935-60, and selected periods 1935-54

Year	Total Government assistance 1/	Total returns		Production	Returns per ton		Government assistance per ton	Returns per acre	
		Including Government assistance	Excluding Government assistance		Including Government assistance	Excluding Government assistance		Including Government assistance 2/	Excluding government assistance
	1,000 dollars	1,000 dollars	1,000 dollars	Tons	Dollars	Dollars	Dollars	Dollars	Dollars
1935.................:	98	11,327	11,229	203,000	55.80	55.32	0.48	74.94	74.29
1936.................:	0	12,667	12,667	182,000	69.60	69.60	.0	68.70	68.69
1937.................:	1,395	15,487	14,092	247,000	62.70	57.05	5.65	93.92	85.47
1938.................:	947	12,180	11,233	290,000	42.00	38.73	3.27	62.71	57.83
1939.................:	5,313	11,883	6,570	245,000	48.50	26.81	21.69	64.80	35.82
1940.................:	2,481	9,850	7,369	171,000	57.60	43.09	14.51	75.46	56.45
1941.................:	10,476	17,870	7,394	209,000	85.50	35.38	50.12	130.90	54.16
1942.................:	7,103	28,702	21,599	254,000	113.00	85.04	27.96	144.07	109.02
1943.................:	20,459	65,764	45,305	401,000	164.00	112.98	51.02	273.06	188.11
1944.................:	46,979	61,900	14,921	309,500	200.00	48.21	151.79	291.00	70.14
1945.................:	17,651	48,923	31,272	241,000	203.00	129.76	73.24	318.91	203.85
1946.................:	753	60,216	59,463	193,000	312.00	308.10	3.90	534.14	527.46
1947.................:	18,989	40,392	21,403	306,000	132.00	69.94	62.06	237.07	125.62
1948.................:	9,828	31,021	21,193	231,500	134.00	91.55	42.45	238.79	163.14
1949.................:	8,071	34,965	26,894	259,000	135.00	103.84	31.16	203.85	156.79
1950.................:	0	40,716	40,716	156,000	261.00	261.00	0	365.66	365.66
1951.................:	4,209	40,414	36,205	242,000	167.00	149.61	17.39	326.32	292.33
1952.................:	4,478	44,928	40,450	288,000	156.00	140.45	15.55	288.76	259.97
1953.................:	2,132	37,047	34,915	233,000	159.00	149.85	9.15	268.07	253.39
1954.................:	962	29,400	28,438	168,000	175.00	169.27	5.73	243.95	235.97
1955.................:	0	38,700	38,700	225,000	172.00	172.00	0	355.01	355.01
1956.................:	0	39,200	39,200	200,000	196.00	196.00	0	390.82	390.82
1957.................:	0	43,032	43,032	163,000	264.00	264.00	0	445.90	445.90
1958.................:	0	58,590	58,590	186,000	315.00	315.00	0	612.36	612.36
1959.................:	0	43,512	43,512	222,000	196.00	196.00	0	401.60	401.60
1960.................:	0	43,050	43,050	205,000	210.00	210.00	0	401.73	401.73
Average:									
1935-39...........:	1,550	12,709	11,584	233,400	55.72	47.80	7.92	73.01	64.42
1940-45...........:	17,525	38,835	21,310	264,250	137.18	80.64	56.54	205.70	113.62
1946-48...........:	9,857	43,876	34,020	243,500	192.67	139.71	52.96	336.67	272.07
1949-54...........:	3,309	37,912	34,603	224,333	175.50	154.25	21.25	262.90	260.68

1/ Excludes price support loans; includes wartime consumer subsidy.
2/ Estimated by converting raisin variety grape yield per acre to dried basis (4 to 1 drying ratio) and multiplying by returns per ton for all raisins.

California Raisins

PRODUCER RETURNS AND FEDERAL GOVERNMENT ASSISTANCE
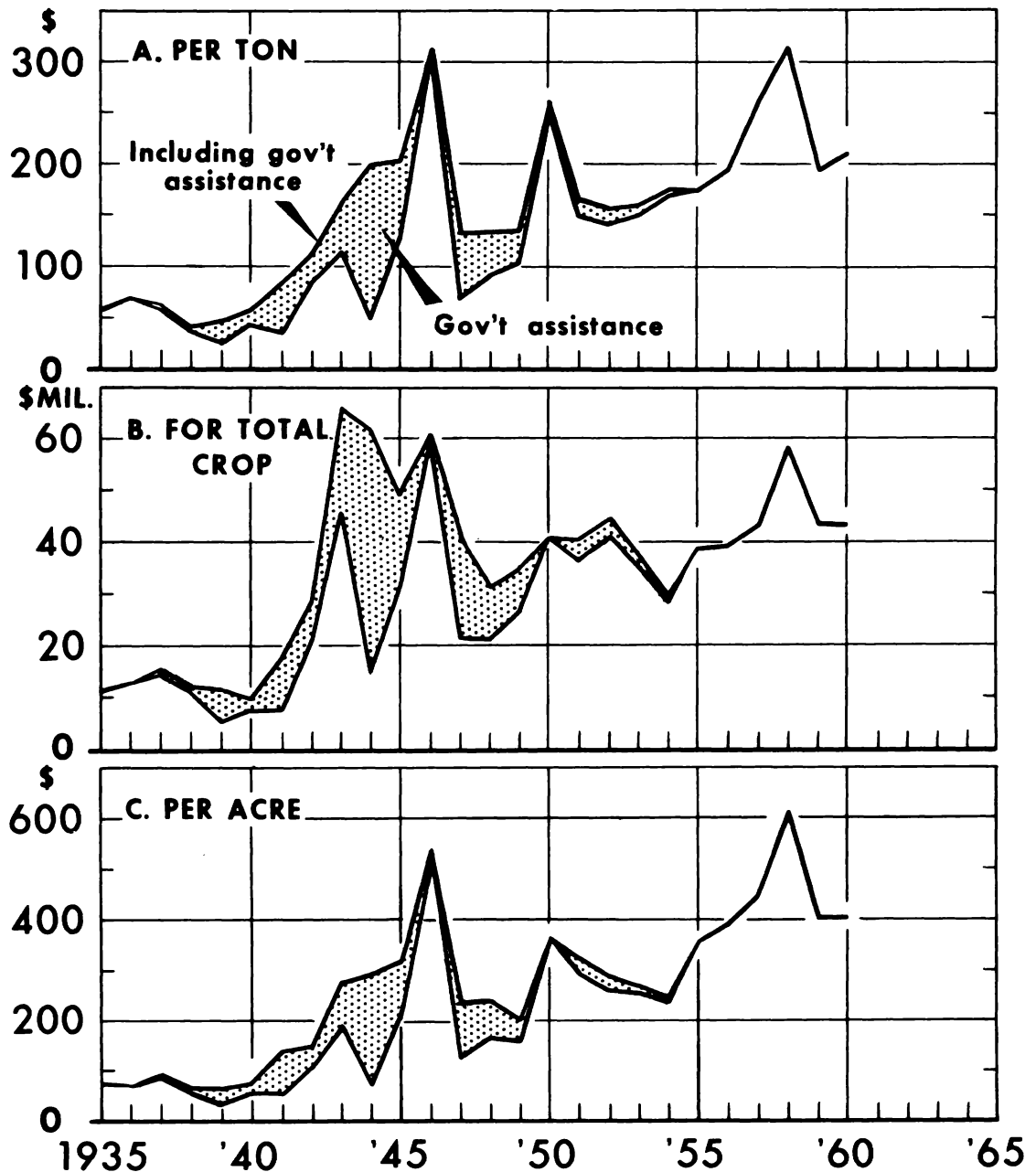
U. S. DEPARTMENT OF AGRICULTURE   NEG. ERS 785-62(1)   ECONOMIC RESEARCH SERVICE

Figure 4

to growers in the winery crush segment of the grape industry. While growers who made raisins received directly some of the benefit of Government purchases, the diversion of raisin-grape supplies from the winery crush to the raisin outlet tended to raise prices to growers selling in the crush outlet. On the other hand, in 1949 and 1951-54, under the Federal raisin marketing order Government financial assistance was given late in the season in the form of a subsidy for surplus raisins sold for export. Neither the fact nor the extent of Government dollar assistance could be known by raisin-grape growers at the time of their decision between the raisin and the winery marketing outlets. Thus, the spillover effect was reduced as the additional uncertainty concerning Government assistance dampened the comparative attractiveness of the raisin outlet.

Figure 4 indicates that the timing of Government assistance was countercyclical with respect to returns per ton to producers. The returns per ton (fig. 4A) show (excepting 1959 when no assistance was given) three major downturns: 1937, 1947, and 1951. Government assistance filled in the troughs following each of these downturns, tapering off (in the postwar period) as recovery occurred. These findings are consistent with the fact that Government assistance during the period of the Federal raisin marketing order was aimed at bolstering returns on a per ton basis rather than on a per-acre or total crop basis.

Crop-Year Returns for Individual Raisin Varieties

Total returns.--Total returns from each of the major varieties are roughly proportionate to production. Natural Thompson Seedless (NTS) raisins have accounted for the bulk (a highly stable 84-85 percent) of the industry's total crop returns since World War II (table 3). Over the same period, bleached raisins increased their share from 7.5 to 9 percent; Muscats and Sultanas showed pronounced declines, while the share of Zante currants remained stable. 2/

Returns per ton.--Since 1941, returns for Muscat, Zante currant, and bleached raisins have exceeded returns per ton for NTS raisins, while Sultana raisins were below NTS (table 4). In 1947-57, comparative returns to the several varieties remained fairly stable in terms of averages for 1947-49, 1951-55, and 1956-57. Correspondingly, the advances in returns per ton since World War II have been remarkably similar for the individual varieties (table 5). Stability of returns for other varieties in relation to NTS raisins can be seen from table 4.

On an annual basis, comparative returns among varieties have been much less stable (table 4). In 1947-58, natural Sultanas showed the smallest range of variation from NTS, from 14.4 percent below NTS (1947) to 6.1 percent above (1958). Zante currants have shown the greatest variation, ranging from 3 percent below to 42.6 percent above NTS.

Seasonal Prices to Producers

Producers and packers are interested in seasonal variations in field market prices (the prices paid by packers to producers) as well as the general level of such prices. (See sections on crop-year average returns for the general level of

_2/ Thompson Seedless grapes may be made into natural (sun-dried) or bleached raisins. Other varieties are made almost entirely into natural raisins; only an insignificant quantity of Muscats is bleached.

Table 3.--Total returns to producers of California raisins, natural and bleached, 1958 and averages for selected periods, 1941-57

Period (Crop years)	Natural raisins								Bleached raisins		Total, natural and bleached	
	Thompson Seedless		Muscat		Sultana		Zante currant					
	Amount	Percentage of total	Amount	Percentage of total	Amount	Percentage of total	Amount	Percentage of total	Amount	Percentage of total	Amount	Percentage of total
	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent
Average:												
1941-46...	35,596	75.3	4,224	8.9	784	1.7	890	1.9	5,745	12.2	47,239	100
1947-49...	29,911	84.3	1,925	5.4	381	1.1	644	1.8	2,652	7.4	35,459	100
1951-55...	32,104	84.3	1,602	4.2	248	0.7	599	1.6	3,523	9.2	38,098	100
1956-57...	34,974	85.1	1,592	3.9	175	0.4	883	2.1	3,499	8.5	41,104	100
1958......	49,593	84.6	1,714	2.9	231	0.4	1,048	1.8	5,594	9.5	58,590	100

Table 4.--Difference between returns per ton for natural Thompson Seedless raisins and for other varieties and types, as a percentage of returns per ton for natural Thompson Seedless raisins, annual 1946-58, and averages for selected periods, 1910-57

Period (crop years)	Natural raisins			Bleached raisins
	Muscat	Sultana	Zante currant	
	Percent	Percent	Percent	Percent
1946 ....:	+5.9	-1.8	+16.3	+3.7
1947 ....:	-5.3	-14.4	+10.6	+14.5
1948 ....:	+14.8	-5.1	+18.6	+27.5
1949 ....:	+30.5	-10.3	+29.0	+28.8
1950 ....:	+11.9	-3.8	0.0	-0.4
1951 ....:	+15.2	-9.1	-0.6	+10.3
1952 ....:	-1.9	-8.4	+5.8	+14.9
1953 ....:	+12.9	-13.5	+16.1	+35.5
1954 ....:	+19.6	-6.0	+26.2	+32.7
1955 ....:	+31.1	-9.6	+29.9	+19.8
1956 ....:	+30.0	-6.8	+42.6	+22.1
1957 ....:	+2.7	-6.8	-3.0	+5.3
1958 ....:	+8.0	+6.1	+8.7	+9.0
Average: 1/				
1910-14..............:	-17.4	---	---	---
1915-19..............:	-25.8	---	---	---
1920-24..............:	-12.3	---	---	---
1925-29..............:	-0.5	---	---	---
1930-34..............:	-19.0	---	---	---
1935-38..............:	+3.6	---	---	---
1941-46..............:	+5.0	-2.6	+34.7	+19.8
1947-49..............:	+13.3	-9.9	+19.4	+23.6
1951-55..............::	+15.4	-9.3	+15.5	+22.6
1956-57..............:	+16.4	-6.8	+19.8	+13.7

1/ Algebraic sum of percentages divided by number of years.

field market prices.) Because raisins are storable, independent producers and packers are faced each season with the problem of when -- that is, at what market quotation -- to sell and buy raisins. When extreme price variation is absent, the possibilities for speculative profit (or loss) and disruptive marketing practices associated with fluctuating price levels are reduced. Stable field prices, when reflected in stable f.o.b. prices (prices received by packers), stimulate trade confidence which in turn may strengthen demand for the product. 3/

3/ In 1955, after 4 successive years of highly stable raisin prices, 68 out of 81 members of the raisin trade, when interviewed, expressed confidence in the stability of raisin prices. ("California Raisin Marketing Study," unpublished report prepared for California Raisin Advisory Board by Stanford Research Institute, Menlo Park, Calif., 1956.)

Table 5.--Returns per ton to producers of California raisins, natural and bleached, averages for selected periods and percentage change from preceding periods, 1920-58

Period (crop years)	Natural raisins				Bleached raisins	Average, natural and bleached
	Thompson Seedless	Muscat	Sultana	Zante Currant		
Returns:	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1920-24 ....:	129.60	107.00	---	---	---	120.60
1925-29 ....:	61.00	61.00	---	---	---	61.20
1930-34 ....:	57.60	47.80	---	---	---	55.88
1935-39 ....:	1/57.50	1/59.75	---	---	---	55.72
1941-46 ....:	174.77	183.17	172.17	228.17	206.33	179.58
1947-49 ....:	130.83	148.13	117.80	156.17	161.67	133.67
1951-55 ....:	161.80	187.20	146.80	187.20	198.40	165.80
1956-57 ....:	226.50	258.50	211.00	263.00	254.50	230.00
1958 ....:	311.00	336.00	330.00	338.00	339.00	315.00
Change from preceding period:	Percent	Percent	Percent	Percent	Percent	Percent
1925-29 ....:	-52.9	-43.0	---	---	---	-49.3
1930-34 ....:	-5.6	-21.6	---	---	---	-8.7
1935-39 ....:	-0.2	+25.0	---	---	---	-0.3
1941-46 ....:	+203.9	+206.6	---	---	---	+222.3
1947-49 ....:	-25.1	-19.1	-31.6	-31.6	-21.7	-25.6
1951-55 ....:	+23.7	+26.4	+24.6	+19.9	+22.7	+24.0
1956-57 ....:	+40.0	+38.1	+43.7	+40.5	+28.3	+38.7
1958 ....:	+37.3	+30.0	+56.4	+28.5	+33.2	+37.0

1/ 1935-38 only

Price stability and volume regulation.--Seasonal field prices for the major raisin variety, natural Thompson Seedless, have shown remarkable stability in each of the 9 crop years of volume regulation (pooling) under the Federal raisin marketing order (fig. 5A). On the other hand, they were highly unstable in marketing seasons prior to the order, and when volume regulations were suspended in above-parity situations (fig. 5B). Prices were less stable during periods of Government assistance by purchases (fig. 5B, crop years 1947-48 and 1948-49) than during Government assistance by pooling and export subsidy (fig. 5A, crop years 1949-50, and 1951-52 through 1954-55).

Figure 5A shows that in years of volume regulation (with a minor exception in crop year 1959-60), the initial level of field prices tended to be firmly maintained, with a slight upward drift throughout the remainder of the marketing season. This was in sharp contrast to the erratic seasonal variation of field prices from the initial level in years without volume regulation (fig. 5B). In retrospect, the slight upward seasonal drift of field prices in seasons of volume regulation has eliminated much of the producer's problem of when to sell.

California Natural Thompson Seedless Raisins

WEEKLY PRICES TO PRODUCERS

$ PER TON

A. With Pooling Under Federal Marketing Order

300

200

100

o—o 1949-50   ---- 1953-54   •—•—• 1956-57
+++++ 1951-52   △—△ 1954-55   --- 1959-60
-- -- 1952-53   x—x 1955-56   ——— 1960-61

0

500

B. Without Pooling Under Federal Marketing Order *

400

1946-47

1958-59

1957-58

300

1950-51

200

1948-49

100

1947-48

0

AUG.   OCT.   DEC.   FEB   APR.   JUNE
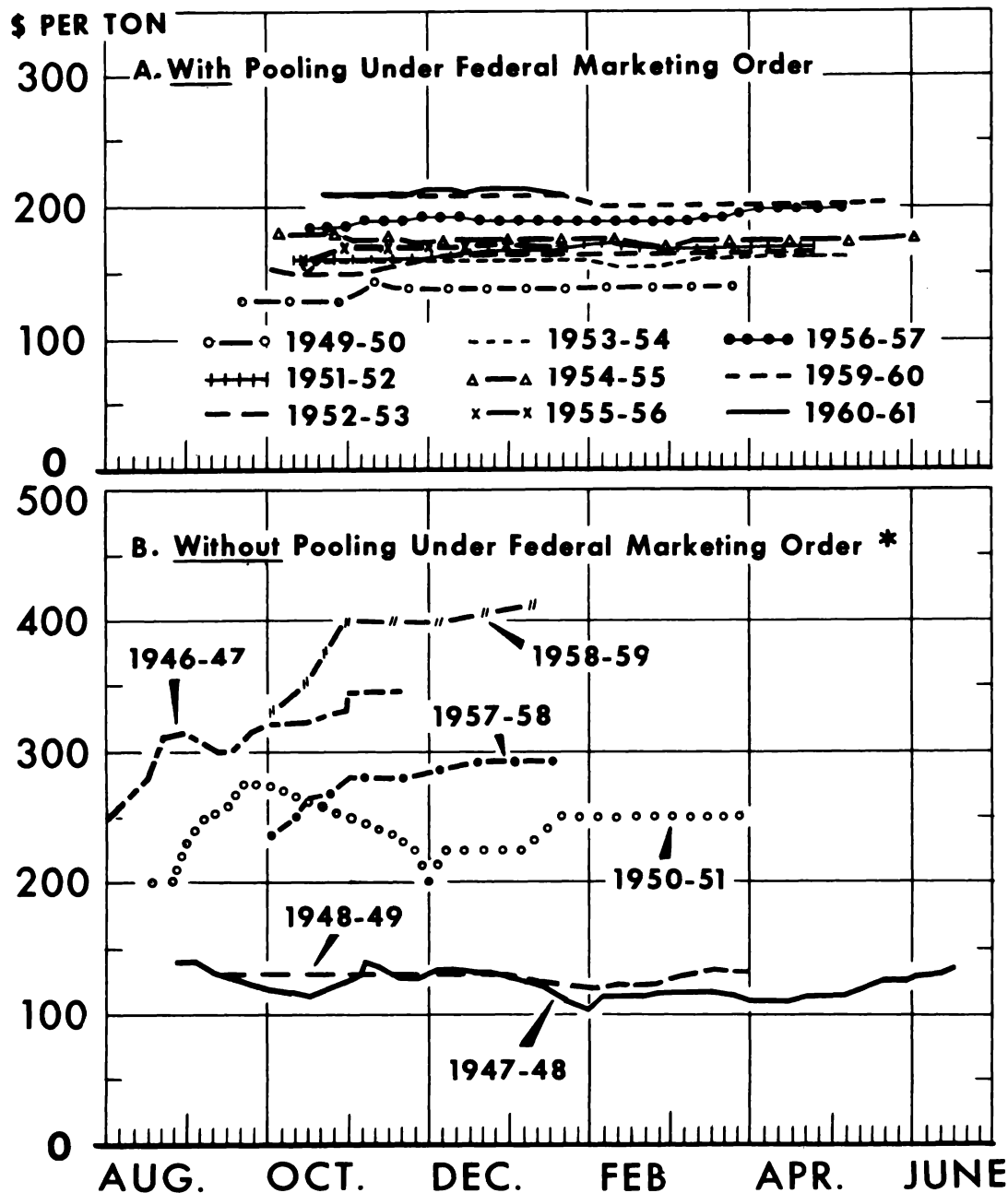
* 1947-48. 48-49 ARE YEARS WITH GOVERNMENT PURCHASING OPERATIONS.

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Figure 5

Since f.o.b. prices have varied closely with field prices, the stability of field prices in years of volume regulation implies corresponding stability of prices to trade buyers in the f.o.b. market (see discussion, p. 41). Such price behavior has served to avoid the depressing effects on demand that may occur as a result of trade uncertainty, inventory losses, and other factors related to price instability.

The possibility of profits based primarily on speculative buying and selling within the season was definitely lessened by stability of field prices in years of volume regulation. The slight upward seasonal drift of field prices, however, tended to favor (in a speculative sense) producers who closed their sales later in the season and packers who bought early. Packers who maintained a short position tended to lose as they were forced to cover short sales in the face of rising prices.

Stability of field prices in seasons of volume regulation has tended to equalize returns among producers. By contrast, instability of prices in other years has distorted the distribution of returns among producers. For example, returns per ton to producers within the same season varied from $250 to almost $350 in 1946-47, from $100 to $140 in 1947-48, and from $200 to $275 in 1950-51 (fig. 5B).

Seasonal range of prices for individual varieties, 1929-58.--The annual range of field market prices is the difference between the maximum and minimum quotations for each season. This measure has the severe limitation of being influenced by one extreme quotation at which, perhaps, very few sales were made. In table 6, the seasonal ranges of field prices have been made comparable with each other by expressing each range as a percentage of the midpoint of that range.

The seasonal range of field prices showed two important developments in the period of volume regulation under the Federal marketing order. It was reduced *markedly for each of the four major raisin varieties, and it became more nearly* equal for all of the varieties. In 1929-33, for example, the price range of each variety exceeded 30 percent, with natural Thompsons averaging 33 percent and Muscats 50 percent (table 6). In 1946-48, the price range for natural Thompsons, Muscats, and Sultanas each averaged around 27 percent, while the range for Zante currants was 15 percent. By contrast, in the first 7 years of volume regulation (1949, and 1951-56), the seasonal range of field prices for the four major varieties varied from 8 percent for natural Thompson to 10.5 percent for Muscats.

NATURAL THOMPSON SEEDLESS RAISIN PRODUCERS

Declining Number of Producers

A substantial decline in the number of NTS raisin producers occurred in 1949-60. 4/ Moderately increased total returns have been shared at much higher rates of return by fewer producers. The exit of producers and the associated increase in incomes to remaining producers may conceal the effects of other economic forces, such as a possible long-term decline in demand. The industry is always vulnerable within one season to a reversal of the recent trend of exits by producers.

In 1949, 7,771 NTS producers delivered raisins to packers (table 7). The number declined steadily during the 1950's. In 1957-60, there were an average of 4,532

4/ NTS production as a percentage of the industry total has increased from 85.4 percent in 1949, 1951, and 1952, to 86.6 percent in 1954-56, and to 88.7 percent in 1959-60.

Table 6.--Range of price quotations (difference between minimum and maximum) to pro-
ducers of 4 varieties of California raisins, as percentage of midpoint of range, an-
nual and averages for selected periods, 1929-58

Period (crop years)	Natural Thompson Seedless	Natural Muscat	Natural Sultana	Natural Zante currant
	Percent	Percent	Percent	Percent
1929.................:	40.0	33.3	28.6	---
1930 1/.............:	---	---	---	---
1931.................:	40.0	24.0	24.0	---
1932.................:	35.3	90.9	46.2	---
1933.................:	16.7	52.6	33.3	---
1934.................:	0	0	0	---
1935.................:	21.3	28.6	5.1	---
1936.................:	18.2	25.4	18.2	---
1937.................:	33.3	8.0	8.7	---
1938.................:	21.6	24.4	15.4	---
1939.................:	28.6	22.2	18.2	---
1940.................:	18.2	19.8	15.4	---
1941.................:	35.3	27.7	14.3	---
1942.................:	0	0	0	---
1943.................:	0	0	0	---
1944.................:	0	0	0	---
1945.................:	7.2	4.5	4.9	5.5
1946.................:	33.3	23.0	30.1	22.2
1947.................:	33.3	29.8	40.0	10.5
1948.................:	15.4	29.5	8.3	13.3
1949.................:	9.2	23.7	8.3	13.3
1950.................:	31.6	22.2	17.8	19.2
1951.................:	9.0	11.8	0	6.4
1952.................:	12.5	9.5	10.2	9.5
1953.................:	9.5	6.1	6.9	5.5
1954.................:	5.7	10.5	26.7	4.9
1955.................:	7.5	7.2	13.3	15.0
1956.................:	7.3	4.5	5.7	8.7
1957.................:	25.9	17.8	12.8	0
1958.................:	25.2	15.4	12.1	0
Average:				
1929-33 2/..........:	33.0	50.2	33.1	---
1935-40.............:	23.5	21.4	13.5	---
1946-48.............:	27.3	27.4	26.1	15.3
1949,1951-56........:	8.7	10.5	10.2	9.0

1/ Unreported.
2/ 1930 omitted.

Table 7.--Number of producers of California natural Thompson Seedless raisins, quantity produced, percentages of Thompson Seedless grapes used for raisins and crush, and yield per bearing acre of raisin variety grapes and natural Thompson Seedless raisins, annual and averages for selected periods, 1949-60

Period (crop years)	Natural Thompson Seedless raisins		Utilization of Thompson Seedless grapes		Yield per bearing acre	
	Producers	Production	NTS raisins	Crush 1/	Raisin variety grapes	NTS raisins 2/
	Number	Dry tons	Percent	Percent	Fresh tons	Dry tons
1949 ....:	7,771	219,800	88.0	12.0	6.04	---
1950 ....:	3/---	127,740	54.6	45.4	5.60	---
1951 ....:	6,030	210,540	62.9	37.1	7.82	---
1952 ....:	6,398	242,730	81.4	18.6	7.41	---
1953 ....:	6,302	204,900	73.8	26.2	6.77	1.76
1954 ....:	5,249	144,100	65.6	34.4	5.57	1.40
1955 ....:	5,146	194,200	63.2	36.8	8.26	2.14
1956 ....:	4,946	175,600	59.1	40.9	7.98	2.02
1957 ....:	4,334	139,100	58.5	41.5	6.76	1.81
1958 ....:	4,324	158,700	52.3	47.7	7.78	2.01
1959 ....:	4,994	201,000	61.4	38.6	8.19	1.99
1960 ....:	4,478	4/ 180,000	58.5	41.5	7.65	4/ 1.89
Average:						
1951-53............:	6,243	219,390	72.3	27.7	7.33	---
1954-56............:	5,114	171,300	62.3	37.6	7.27	1.85
1957-60............:	4,532	169,700	57.7	42.3	7.60	1.92

1/ Based on data from Wine Institute Bulletin, Wine Institute, San Francisco, Calif.
2/ Based on survey data of Calif. Crop and Livestock Reporting Service. Data not available prior to 1953.
3/ Data not available for 1950. Data on number of producers combined from Raisin Administrative Committee and Sun-Maid Raisin Growers of California, Fresno, Calif.
4/ Preliminary estimate of Calif. Crop and Livestock Reporting Service.

producers delivering NTS raisins to packers, a decline of 42 percent from 1949 (3,239 net exits).

The exit of NTS producers from the raisin industry appears to be associated with increasing entry of Thompson Seedless grape growers into the commercial crush outlet. The decline in number of NTS raisin producers (table 7, col. 1) was associated with an increasing proportion of Thompson Seedless grapes crushed (table 7, col. 4). 5/

Size and Income Distribution of Producers

Individual producers of NTS raisins share unequally in total industry returns. For example, a substantial number of producers fall in both the "less than 5 tons" and "120 tons and over" delivery size classes. It is possible to develop a fairly accurate distribution of total returns among NTS producers of different sizes on the assumption that all producers receive similar prices for tonnage sold. In seasons of volume regulation under the marketing order, this assumption is quite realistic (fig. 5A).

Table 8 shows distribution of numbers of NTS producers and their percentages of total returns by size of producer as an average of the 1949 and 1955 crop years. About half the producers, each accounting for less than 20 tons, received approximately one eighth of the total returns. At the other end of the scale, the largest 3 percent of all producers received almost one fifth of the total returns.

In figure 6 the cumulative percentages of producers, arrayed by size of production, are plotted against the cumulative percentages of returns for both 1949 and 1955, on the realistic assumption that all producers received similar prices. The areas between each of the curves and the hypothetical line of equal distribution indicate the degree of inequality in distribution of returns. The distribution of returns among producers was less unequal in 1955 than in 1949, mainly because of the exit of small producers (see following section).

Exits of Small Producers

The crop years 1949 and 1955 have been selected for detailed analysis of producers by size of production. 6/ Especially striking in 1949 are the large number of very small NTS raisin producers and their small cash income from the production

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5/ The relation between exit of raisin producers and the shift to the crushing outlet is not nullified by the years of inverse relationship shown in table 7 between the raisin utilization percentage (col. 3) and raisin production (col. 2). The inverse relationship, where it exists, can be explained largely by variation in fresh grape and raisin yields per acre. For example, in 1955 (see table 7), a relatively low percentage of raisin utilization (63.2 percent) is coupled with heavy raisin production (194,200 tons). The explanation for this inverse relationship may be found in the high yields of raisin grapes and NTS raisins (8.26 fresh tons and 2.14 dry tons, respectively, per acre), which offset the negative impact on raisin production of the shift to the crush.

6/ Complete data on production are available only for crop years of volume regulation. The first such year is 1949. The 1955 data is typical of the period 1954-56. In 1949, compared to 1955, a larger number of Thompson Seedless grape growers made raisins, and a higher percentage of the crop was dried.

Table 8.--Number of California natural Thompson Seedless raisin producers and percentage of total returns by size of production, average for crop years 1949 and 1955

Size of production 1/	Producers		Percentage of returns to all producers
	Number	Percent	Percent
0- 19.9 tons..........	3,037	47.0	13.6
20- 39.9 tons..........	1,848	28.6	25.9
40- 79.9 tons..........	1,123	17.4	29.8
80- 119.9 tons..........	276	4.3	12.9
120 tons and over........	174	2.7	17.8
All producers	6,458	100.0	100.0

1/ Production is taken as equal to deliveries. Data on number of producers and size of production combined from Raisin Adm. Comm. and Sun-Maid Raisin Growers of Calif.

and sale of NTS raisins (fig. 7). For many growers, small and large, raisins represent only one phase of a multiproduct grape operation. In 1949, almost 1,200 NTS producers, who were 15.4 percent of all producers, produced less than 5 tons (table 9). Their average output amounted to 1.95 tons (table 10), approximately the yield of 1 acre. At 1949 prices ($129.80 per ton), this meant, on the average, total receipts of $253 to each of these 1,200 producers (table 10). Slightly more than half of all raisin producers (4,144) delivered fewer than 20 tons in 1949. These producers averaged 8.73 tons, which (at 1949 prices) brought a gross cash income from NTS raisins of $1,135 per producer. The 169 largest NTS producers (each of whom produced 120 tons or more) averaged $29,003 in total receipts from sales averaging 223.1 tons per producer. Tables 10 and 11 show in detail the relatively small proportion of total returns and production represented by the smaller producers.

In 1955, the significant changes compared to 1949 were (1) a 34 percent decline in total number of NTS producers, and (2) the concentration of this decline in the smaller producers (fig. 7A and tables 9 and 11). The number of producers of less than 20 tons declined by 53 percent. On the other hand, producers of 30 tons and more, declined by only 1 percent.

As a result of the increase in prices in 1955, producers who remained in the raisin industry increased their total returns over 1949. Table 10 shows these increases by size of producers. For example, returns per producer in the 10- to 19.99-ton size increased from $1,899 in 1949 to $2,488 in 1955. These gains were due at least in part to the fact that 34 percent of the producers had left the industry by 1955.

COMPARATIVE RETURNS SITUATION FACING RAISIN PRODUCERS

One of the California grape industry's most significant characteristics is the interdependence among its raisin, wine, and fresh-shipment segments. This is produced by the ease with which multipurpose grape supplies are shifted among outlets by grower-sellers and processor- or shipper-buyers in their continuing

California Natural Thompson Seedless Raisins

DISTRIBUTION OF RETURNS BY SIZE OF PRODUCER, 1949 AND 1955

% OF TOTAL RETURNS

HYPOTHETICAL LINE OF EQUAL DISTRIBUTION
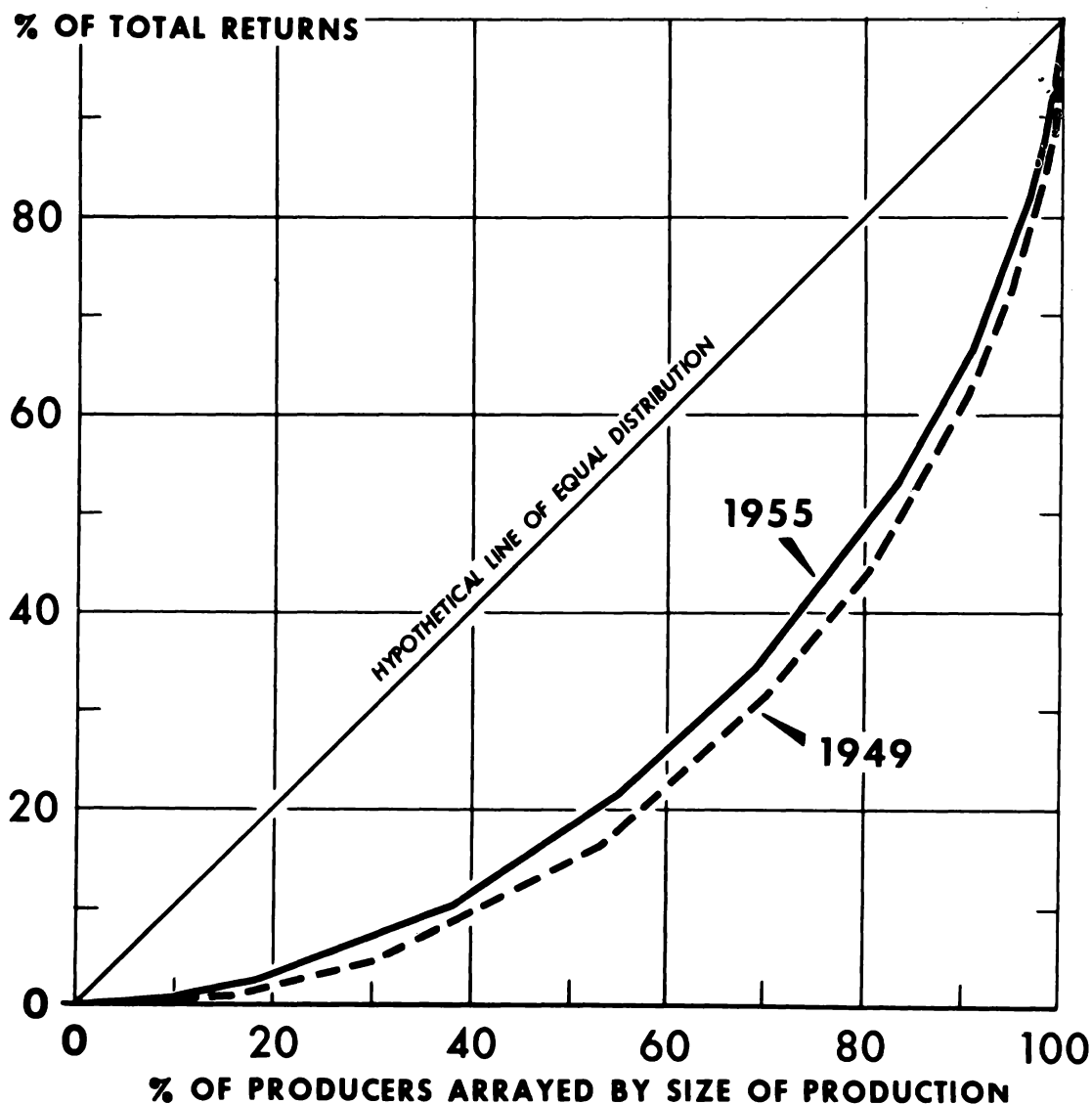
1955

1949

% OF PRODUCERS ARRAYED BY SIZE OF PRODUCTION

Figure 6

California Natural Thompson Seedless Raisins

NUMBER OF PRODUCERS, AND VOLUME PRODUCED, BY SIZE OF PRODUCER, 1949 AND 1955

A. PRODUCERS

1949 / 1955

B. PRODUCTION *

SIZE OF PRODUCTION (TONS)

0-4   5-9   10-19   20-29   30-39   40-59   60-79   80-119   120-159   160-239   240+

* PRODUCTION BASED ON DELIVERIES.
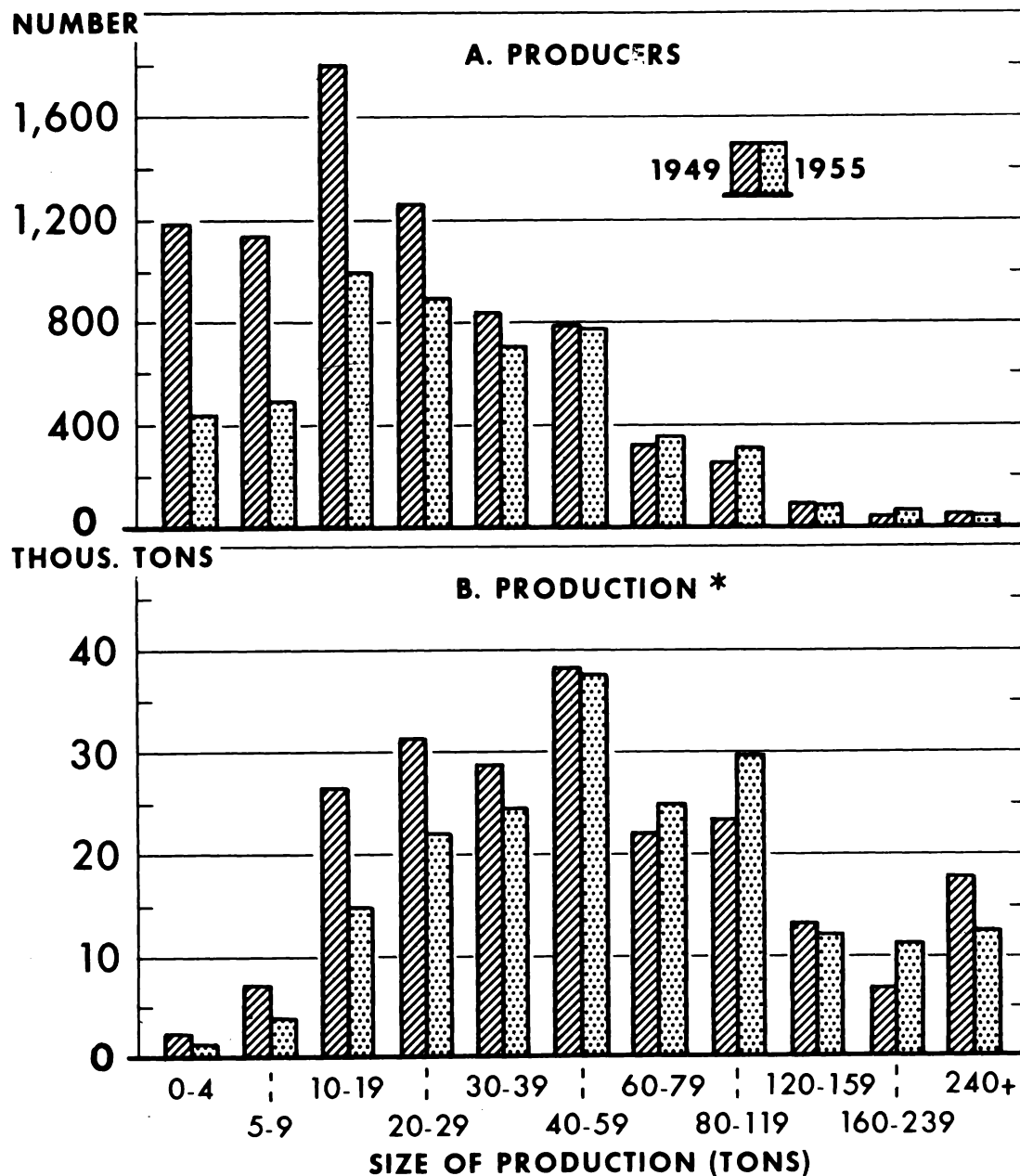
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Figure 7

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Table 9.--Number and percentage of producers, by size of production, California natural Thompson Seedless raisins, crop years 1949 and 1955

| Size of production 1/ | 1949 | | | | 1955 | | | | Change in 1955 compared to 1949 | |
| | Each production size | | Cumulative | | Each production size | | Cumulative | | | |
	Producers	Percent	Producers	Percent	Producers	Percent	Producers	Percent	Producers	Percent
0- 4.9 tons.........	1,195	15.4	1,195	15.4	444	8.6	444	8.6	-751	-62.9
5- 9.9 tons.........	1,132	14.6	2,327	30.0	490	9.5	934	18.2	-642	-56.7
10- 19.9 tons.........	1,817	23.4	4,144	53.3	996	19.4	1,930	37.5	-821	-45.2
20- 29.9 tons.........	1,269	16.3	5,413	69.7	891	17.3	2,821	54.8	-378	-29.8
30- 39.9 tons.........	834	10.7	6,247	80.4	702	13.6	3,523	68.5	-132	-15.8
40- 59.9 tons.........	789	10.2	7,036	90.5	778	15.1	4,301	83.6	- 11	- 1.4
60- 79.9 tons.........	319	4.1	7,355	94.7	360	7.0	4,661	90.6	+ 41	+12.9
80-119.9 tons.........	247	3.2	7,602	97.8	306	6.0	4,967	96.5	+ 59	+23.9
120-159.9 tons.........	95	1.2	7,697	99.1	87	1.7	5,054	98.2	- 8	- 8.4
160-239.9 tons.........	36	0.5	7,733	99.5	61	1.2	5,115	99.4	+ 25	+69.4
240-319.9 tons.........	19	0.2	7,752	99.8	14	0.3	5,129	99.7	- 5	-26.3
320-399.9 tons.........	7	0.1	7,759	99.9	10	0.2	5,139	99.9	+ 3	+42.9
400 tons and over.....	12	0.1	7,771	100.0	7	0.1	5,146	100.0	- 5	-41.7
Total	7,771	100.0	7,771	100.0	5,146	100.0	5,146	100.0	-2,625	-33.8

1/ Production is taken as equal to deliveries.

Data combined from Raisin Administrative Committee and Sun-Maid Raisin Growers of California, Fresno, Calif.

Table 10.--Total and average production and returns to producers by size of production, California natural Thompson Seedless raisins, crop years 1949 and 1955

Size of production 1/	1949					1955				
		Production 1/		Total returns			Production 1/		Total returns	
	Producers	Total	Per producer	Per producer 2/	Cumulative 3/	Producers	Total	Per producer	Per producer 4/	Cumulative 5/
	Number	Tons	Tons	Dollars	Thous. Dollars	Number	Tons	Tons	Dollars	Thous. Dollars
0- 4.9 tons............	1,195	2,335	1.95	253	303	444	1,126	2.54	424	188
5- 9.9 tons............	1,132	7,264	6.42	833	1,246	490	3,747	7.65	1,278	814
10- 19.9 tons............	1,817	26,586	14.63	1,899	4,697	996	14,836	14.90	2,488	3,291
20- 29.9 tons............	1,269	31,303	24.67	3,202	8,760	891	22,041	24.74	4,132	6,972
30- 39.9 tons............	834	28,784	34.51	4,479	12,496	702	24,499	34.90	5,828	11,064
40- 59.9 tons............	789	38,214	48.43	6,286	17,456	778	37,680	48.43	8,088	17,356
60- 79.9 tons............	319	21,984	68.92	8,946	20,310	360	24,881	69.11	11,541	21,511
80-119.9 tons............	247	23,306	94.36	12,248	23,335	306	29,772	97.29	16,247	26,483
120-159.9 tons............	95	13,032	137.18	17,806	25,026	87	12,110	139.20	23,246	28,506
160-239.9 tons............	36	6,828	189.67	24,619	25,913	61	11,191	183.46	30,638	30,374
240-319.9 tons............	19	5,079	267.32	34,698	26,572	14	3,890	277.86	46,403	31,024
320-399.9 tons............	7	2,588	369.71	47,988	26,908	10	3,578	357.80	59,753	31,622
400 tons and over.........	12	10,184	848.67	110,157	28,230	7	4,916	702.29	117,282	32,443
Total...................	7,771	217,487	27.99	3,633	28,230	5,146	194,267	37.75	6,304	32,443

1/ Production is taken as equal to deliveries.
2/ Computed at $129.80 per ton.
3/ Computed by multiplying the cumulative production (Table 11) by $129.80.
4/ Computed at $167.00 per ton.
5/ Computed by multiplying the cumulative production (Table 11) by $167.00.

Data on number of producers and size of production combined from Raisin Administrative Committee and Sun-Maid Raisin Growers of California, Fresno, Calif.

Table 11.--Tonnage produced and percentage of production, by size of production per producer, California natural Thompson Seedless raisins, crop years 1949 and 1955

Size of production 1/	1949				1955				Change in 1955 compared to 1949	
	Each production size		Cumulative		Each production size		Cumulative			
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent
0- 4.9 tons............:	2,335	1.1	2,335	1.1	1,126	0.6	1,126	0.6	- 1,209	-51.8
5- 9.9 tons............:	7,264	3.3	9,599	4.4	3,747	1.9	4,873	2.5	- 3,517	-48.4
10- 19.9 tons............:	26,586	12.2	36,185	16.6	14,836	7.6	19,709	10.1	-11,750	-44.2
20- 29.9 tons............:	31,303	14.4	67,488	31.0	22,041	11.3	41,750	21.4	- 9,262	-29.6
30- 39.9 tons............:	28,784	13.3	96,272	44.3	24,499	12.6	66,249	34.0	- 4,285	-14.9
40- 59.9 tons............:	38,214	17.6	134,486	61.9	37,680	19.5	103,929	53.5	- 534	- 1.4
60- 79.9 tons............:	21,984	10.1	156,470	72.0	24,881	12.8	128,810	66.3	+ 2,897	+13.2
80-119.9 tons............:	23,306	10.7	179,776	82.7	29,772	15.4	158,582	81.7	+ 6,466	+27.7
120-159.9 tons............:	13,032	6.0	192,808	88.7	12,110	6.2	170,692	87.9	- 922	- 7.1
160-239.9 tons............:	6,828	3.1	199,636	91.8	11,191	5.8	181,883	93.7	+ 4,363	+63.9
240-319.9 tons............:	5,079	2.3	204,715	94.1	3,890	2.0	185,773	95.7	- 1,189	-23.4
320-399.9 tons............:	2,588	1.2	207,303	95.3	3,578	1.8	189,351	97.5	+ 990	+38.3
400 tons and over........:	10,184	4.7	217,487	100.0	4,916	2.5	194,267	100.0	- 5,268	-51.7
Total.................:	217,487	100.0	217,487	100.0	194,267	100.0	194,267	100.0	-23,220	-10.7

1/ Production is taken as equal to deliveries.

Data combined from Raisin Administrative Committee and Sun-Maid Raisin Growers of California, Fresno, Calif.

search for more profitable marketing opportunities, as well as by the possibilities of storage and varietal substitutability in certain outlets. Mehren 7/ has stated:

> "Even (though) the multiple-use attributes of grapes, which so closely tie the various elements of the grape industry, exist in the canning industries, the milk industry and in other agricultural groups where well developed byproducts outlets exist . . . there is greater complexity in the structure of the grape industry than in most others -- in the sense that there are more integrated and interdependent parts among which there is rather easier shifting of raw materials than in most similar industries."

In light of the strong degree of market interdependence among grape industry segments, the substantial increase in returns in the raisin outlet necessarily raises these questions: Did raisin returns forge ahead of returns in competing outlets, or was the advance in raisins merely part of a general increase in grape industry returns? How effectively did supplies shift between the raisin and winery crush outlets to satisfy demand in both outlets?

Raisin Outlet Versus Commercial Crush Outlet

Increase in returns for raisins.--Returns per ton for raisins since World War II have moved substantially ahead of returns in the major competing outlet, the commercial crush (fig. 8). Table 12 indicates that crop-year average returns per ton for raisin grapes in 1935-39 were almost identical in the raisin and commercial crush outlets, while in 1949-60, returns in the crush outlet fell 24 percent below the raisin outlet. 8/

In 1946, a year of strong overall demand for grapes, returns from the crush outlet for raisin grapes were about 5 percent higher than from the raisin outlet. Not once in the next 14 years did returns from the crush outlet again exceed returns from the raisin outlet. During 1947-48, with heavy Government purchases of raisins and depressed grape and raisin markets, crush returns were 11 percent less than raisin returns. In 1949, the first year of the Federal raisin marketing order, returns from the crush were 25 percent below those from raisins. In 1950, with high prices for grapes and raisins and suspension of the pooling provisions of the raisin order, returns from the crush outlet increased to only 9 percent below the raisin outlet. In the periods 1951-53 and 1954-56, with pooling again in effect, the crush outlet averaged 28 and 21 percent, respectively, less than the raisin outlet. In 1957-58 pooling was suspended because raisin prices had risen above parity. Crush returns in 1957 were 18 percent below raisin returns. In 1958, largely because early rains caused a "flight" to the winery, crush returns fell to 34 percent below the raisin outlet. With the resumption of pooling in 1959-60, crush returns averaged 25 percent below raisin returns. What factors accompanied the development of returns favoring raisins over the crush use for raisin grapes?

(1) Volume regulation.--Over the period 1946-60, there has been a definite association between volume regulation under the Federal raisin marketing order and increases in raisin returns relative to crush outlet returns for raisin grapes. Conversely, in years when there was no pooling (1946, 1947-48, 1950, 1957), there

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7/ Mehren, George L., Economic Situation and Market Organization in the California Grape Industries, and Appendix C, Grape Industry Statistics, compiled by S. W. Shear. Giannini Found. Agr. Econ., Univ. Calif., Berkeley, May 1950, 71.

8/ Unless otherwise specified, all comparisons of returns for raisins with returns for grapes marketed fresh are on an equivalent fresh-weight basis, calculated on the basis of the 4-to-1 drying ratio employed by the U. S. Crop Reporting Service.

California Raisin Grapes

PRODUCERS' RETURNS PER TON
CRUSHED AS % OF DRIED*

COMPARISON IS ON A FRESH WEIGHT BASIS, ASSUMING A 4 ro 1 DRYING RATIO FOR RAISINS
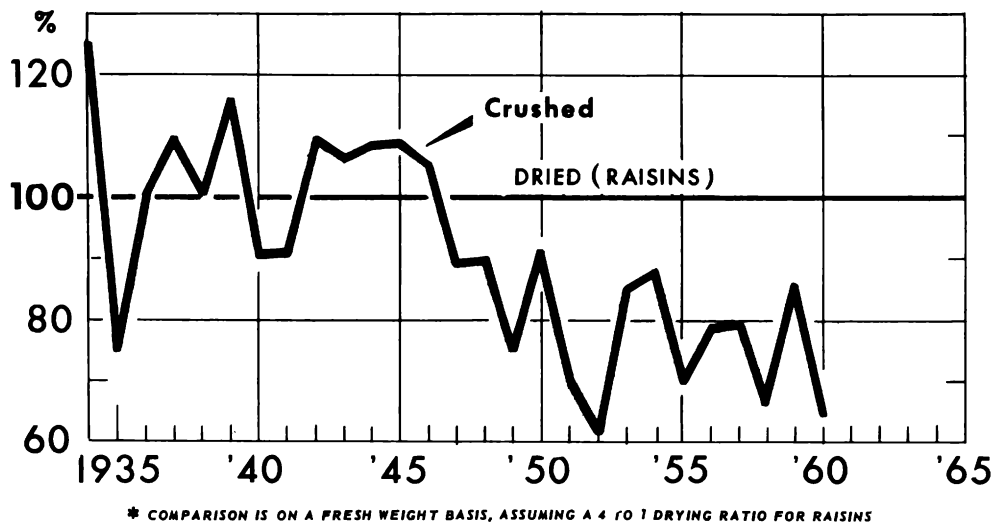
U. S. DEPARTMENT OF AGRICULTURE   NEG. ERS 789-62(1)   ECONOMIC RESEARCH SERVICE

Figure 8

was a tendency for the disparity in favor of raisins to diminish (except in the rain-influenced crop year of 1958). In these 5 years without pooling, crush returns averaged 91.4 percent of raisin returns; in the 9 years of pooling, crush returns averaged only 75.2 percent of raisin returns.

(2) Monetary assistance.--The form, as well as the presence and amount, of Government dollar assistance has been associated with the differential between raisin returns and crush returns. In 1947 and 1948, when Government assistance in the form of direct purchases of raisins averaged somewhat more than $14 million per crop year, returns from the crush were 89 percent of returns from the raisin outlet (table 12). In 1949 and 1951-54, when Government assistance for raisins subsidized the disposition of surplus pools under the Federal marketing order, it averaged only $4 million per crop year (chiefly export subsidy); but crush returns fell to 76 percent of raisin returns.

Government assistance by direct purchase of raisins, in the face of a depressed crush market, in 1947 and 1948 was associated with substantial entry of raisin-grape growers into the raisin outlet. Government assistance under the marketing order, excepting 1949, the first year under the order, did not attract additional growers to raisin-making.

In 1947 and 1948, out of the combined deliveries of Thompson Seedless grapes to the raisin and crushing outlets, 79.2 percent were made into raisins. This high percentage tended to lower raisin returns compared to crush returns and to share the benefits of Government assistance among grape industry segments. In 1949 and 1951-54, on the average, 75.8 percent of Thompson Seedless grapes were made

Table 12.--Returns per ton to producers of California raisin grapes sold for fresh
market, crushing, or canning, as percentage of returns for raisins, annual and
averages for selected periods, 1935-60 1/

Period (Crop years)	Dried	Crushed	Fresh	Canned	Fresh, crushed, canned, and dried
	Percent	Percent	Percent	Percent.	Percent
1935.........:	100	75.3	100.4	129.0	93.9
1936.........:	100	100.6	117.2	143.7	102.3
1937.........:	100	109.6	173.9	172.0	110.2
1938.........:	100	100.0	185.7	200.0	108.6
1939.........:	100	115.7	154.5	124.0	108.3
1940.........:	100	90.3	145.1	124.3	102.8
1941.........:	100	90.6	116.8	116.8	99.1
1942.........:	100	109.0	164.2	120.4	108.3
1943.........:	100	106.1	482.9	119.5	102.0
1944.........:	100	108.0	264.0	110.0	104.6
1945.........:	100	108.4	138.5	122.2	105.8
1946.........:	100	105.1	132.1	96.2	105.0
1947.........:	100	89.1	115.8	172.7	100.9
1948.........:	100	89.6	178.2	144.8	106.3
1949.........:	100	75.1	135.0	114.8	100.6
1950.........:	100	91.3	128.1	99.7	99.5
1951.........:	100	70.0	152.8	151.1	94.5
1952.........:	100	61.0	172.3	125.6	101.0
1953.........:	100	85.0	169.8	130.8	104.9
1954.........:	100	88.0	171.9	141.7	107.4
1955.........:	100	69.5	133.0	116.3	94.2
1956.........:	100	78.6	148.6	110.2	98.2
1957.........:	100	79.2	110.6	95.5	94.1
1958.........:	100	66.2	97.9	101.6	86.1
1959.........:	100	85.3	136.5	120.4	100.0
1960.........:	100	64.4	127.6	102.9	90.5
Average:					
1935-39....:	100	100.2	146.3	153.7	104.7
1946-48....:	100	94.6	142.0	137.9	104.1
1949-60....:	100	76.1	140.3	117.6	97.6

1/ Dried returns converted to equivalent fresh basis assuming a 4-to-1 drying ratio.

into raisins; but (excluding 1949) in 1951-54 the percentage was 72.6. Consequently, the benefits of Government assistance by export subsidy were not shared with other industry segments as much as the benefits of direct purchase.

The effects of Government assistance in increasing the comparative returns from raisins cannot be assessed separately from the effects of pooling, with which the assistance was associated. However, Government monetary assistance was probably not necessary in producing the comparatively higher raisin returns. For example, in 1955, when pooling was not supported by Government assistance, returns from raisins relative to the crush were higher than the average for 1949 and 1951-54 when pooling did have Government assistance.

(3) Other factors.--It is possible that two statistical procedures may account for a small part of the increase in raisin returns. First, the drying ratio used (4 pounds fresh weight yields 1 pound dry weight) to convert raisin returns to returns for equivalent fresh weight may be slightly higher in recent years than actual drying ratios. Second, the data on crush returns represent prices paid growers in the open market. Over the years, increasing tonnages have been handled by winery cooperatives, yielding returns to growers which the industry estimates to be somewhat higher than prices paid in the open market.

Additional factors which may account for some of the apparently favorable price for raisins include: Slightly higher costs for making raisins than for harvesting for wineries; and increased reluctance of grape growers to make raisins because of such factors as the greater risks and additional supervision required.

Instability in comparative returns per ton.-- The year-to-year variation in comparative returns per ton from the two outlets has been sizable. In the period 1949-56, for example, returns from the crush outlet (dried=100) varied from 61.0 to 91.3 (table 12). The extent of variation may be indicated by comparing it with the variation found in a more perfect grape market -- the crush market for raisin, table, and wine grapes. Table 13 compares the size of year-to-year changes in relationships of returns per ton for (1) raisin grapes sold in the crush relative to those sold as raisins, and (2) table and wine grapes sold in the crush relative to raisin grapes sold in the crush. In 6 years out of the 18-year period 1935-40 and 1946-57, the relation between returns from raisin grapes sold in the crush and from those sold as raisins changed over the previous year by more than 20 percentage points. On the other hand, the relative returns in the crush field market changed by more than 20 percentage points in only 2 years for wine grapes and raisin grapes, and 4 years for table grapes and raisin grapes.

The year-to-year instability in the relations of returns for grapes sold for raisins and for crush is due largely to market imperfections, and is part of the industry's problem of imbalanced utilization of grape supplies. Raisin-variety grape supplies can be transferred between the crush and raisin channels easily and at little cost. Since growers presumably would always be willing to shift supplies in the interest of additional profits, it can be concluded that the respective field markets for raisins and crush grapes are not able to allocate raisin-grape supplies to produce a relatively stable annual pattern of returns to producers in each outlet. Such an allocation is accomplished to a greater degree in the raisin, table, and wine submarkets of the crush outlet, primarily by the shifting varietal demands of vintners.

Long-term effects of differential in returns.--The increased differential since World War II favoring the raisin over the crush outlet has benefited raisin-grape

growers who consistently decided to make raisins. In 1935-39, returns were equal in the two outlets. From 1946 to 1948, growers making raisins received, on the average, 6 percent more per ton for their crop than growers who sold raisin grapes in the crush outlet. During the 12-year period 1949-60, this differential increased to an average of 31 percent (table 12).

The increase does not appear to be traceable in any substantial degree to increased money costs of production or changed drying ratios. Baranek has computed costs of making raisins from Thompson Seedless grapes versus costs of selling them green (that is, to the crush outlet). 9/ For grapes yielding 10 tons per acre and testing 22° Balling sugar content, costs of raisin-making are 6 percent more, per green ton, than for selling green. At a yield of 8 tons (22° Balling), it costs only 4 percent more per green ton for production and sale in the raisin outlet than in the crush outlet. Data available on drying ratios from 1953 to 1959 do not show any change which might explain the increase in raisin returns.

Therefore, even though a small part of the relative increase in returns from raisins might be ascribed to changes in cost of production and possibly in drying ratios, there remains a large unexplained residual difference in returns between the raisin and crush outlets. This residual difference favoring raisins appears to be associated with (1) the operation of the Federal raisin marketing order and (2) changed attitudes of growers toward raisin making, for example, increased dislike of the risk and effort.

In summary, then, raisin producers who gained most from the long-term shift favoring raisins over the crush alternative were those who made raisins consistently and whose strong preference favoring raisin-making was not diminished. On the other hand, producers with weaker preference for raisin-making who typically chose raisins in some seasons and the crush in others, depending on the market outlook, were affected more by the variability of raisin-crush returns and the accuracy of their estimates than by the long-term increase in returns to raisins. Their situation is treated in the following section.

The differential in gross returns between raisins and the crush will not necessarily continue in the years to come. Other things constant, the differential could be diminished by a shift of growers from the crush to the raisin outlet or by the development of a marketing order with effective volume regulation in the crush segment.

Impact on raisin-grape growers of instability of relationship between annual returns from raisins and the crush.--Presumably, there is a certain equilibrium range within which the ratio of raisin returns to crush returns would reflect equivalent returns (monetary and nonmonetary) to the aggregate farm resources devoted to producing and marketing grapes in each outlet. The wide variation of the actual ratio (fig. 8) indicates that supplies have not been effectively allocated and that returns have been unequal, in many years, to resources of equivalent value devoted to production of grapes for the raisin or crush outlet. If in such years raisin grapes had been transferred (to a certain degree) from the outlet giving the lower return to that giving the higher return, total returns to raisin-grape growers would have been increased. It is possible, then, to conclude that this imbalanced allocation has reduced growers' aggregate income over the years from both outlets. The extent of the loss cannot be assessed from the available data.

Other developments in the marketing system that enter the picture and magnify the losses are: (1) Inefficiencies and increased costs in handling, processing, and storage, due to the yearly variation in grape supplies purchased by the raisin and

9/ Baranek, Paul P., "Green or Dry," Western Fruit Grower, August 1958, p. 17.

crush industries; (2) depressed demand and loss of revenues, due to shortages, gluts, inventory losses, and instability in general. These losses can be, and probably are, shifted in some degree to growers through the pricing system.

Although raisin-grape growers in the aggregate lose by the year-to-year instability of comparative returns, the "speculative" potential in the situation allows some growers to profit while others have serious losses. These are the growers who shift their supplies between the raisin and crush markets, trying to anticipate the more favorable returns. Those who consistently make the "right" decisions gain by the instability of returns. Those who consistently guess "wrong" lose heavily.

Fresh-Shipment and Canning Outlets for Raisin Grapes

Have raisin returns moved ahead of returns in the fresh-shipment and canning outlets as they have moved ahead of returns in the crush outlet? Analysis of the data available indicates that this is likely. Statistics on returns from the fresh market combine the returns for both table and juice uses. Returns per ton from the fresh-shipment outlet exceeded raisin returns by 46 percent in 1935-39; in 1949-60 this figure fell to 40 percent. The shift in net returns favoring raisins probably was even greater than that for gross returns because of the likelihood of a greater increase in costs in the fresh-shipment than in the raisin outlet. The fresh-shipment outlet requires a higher proportion of purchased, price-sensitive inputs, such as materials and machinery, than the raisin outlet.

Returns per ton from the canning outlet, which in 1935-39 were 154 percent of returns from the raisin outlet, fell in 1949-60 to 118 percent of raisin returns (table 12). The quantity of grapes marketed in the canning outlet, however, is not substantial, amounting to only 5,800 tons in 1935-39, and 36,000 tons in 1956-59.

Crush Outlet for Raisin, Table, and Wine Grapes

We have seen that raisin grapes marketed as raisins commanded a premium in returns per ton over raisin grapes marketed in the crush outlet. But raisin grapes sold in the crush outlet are highly competitive with other grapes classed as table grape varieties. Did the differential favoring raisins also exist with respect to the grapes for crush which are compititve with raisin grapes? Let us examine returns for raisin grapes and other grape varietal classes in the crush outlet.

Tables 14 and 15 show the returns per ton in the crush use for raisin, table, and wine grapes. In 1949-60, compared to both 1935-39 and 1946-48, raisin grapes gained in relation to table grapes, their prime competitor in the crush outlet. Returns per ton for table grapes during 1935-39 and 1946-48 averaged 85 and 89 percent, respectively, of returns for raisin grapes (table 15). In 1949-60, they fell to 82 percent. In 1935-39, wine grapes sold for crushing received a 6 percent premium over raisin grapes. In 1946-48, the premium increased to almost 20 percent and held this level in 1949-60. However, because they are used for more specialized purposes, wine grapes, in contrast to table grapes, are hardly competitive with raisin grapes.

Thus, the postwar decline in returns for raisin grapes marketed in the crush (relative to raisins) is also found for other competitive grape varieties in the crush outlet. The differential favoring raisins is not limited solely to the raisin grape component of the crush market.

Table 13.--Returns per ton for California raisin grapes sold in crush and as raisins, and wine and table grapes sold in crush: Frequency of specified year-to-year changes in relation of returns to producers between the raisin and crush outlets for raisin grapes, and within the crush outlet, 18 crop years, 1935-40 and 1946-57.

Change from preceding year (sign disregarded)	Returns per ton for raisin grapes sold in crush as percentage of returns for raisin grapes sold as raisins 1/		Returns per ton for wine grapes sold in crush as percentage of returns for raisin grapes sold in crush.		Returns per ton for table grapes sold in crush as percentage of returns for raisin grapes sold in crush	
	No. of times change occurred	Cumulative	No. of times change occurred	Cumulative	No. of times change occurred	Cumulative
Percentage points	Years	Years	Years	Years	Years	Years
Less than 5 ....:	5	5	3	3	5	5
5.0 - 9.9 ....:	3	8	4	7	4	9
10.0 - 14.9 ....:	1	9	4	11	4	13
15.0 - 19.9 ....:	3	12	5	16	1	14
20.0 - 24.9 ....:	3	15	1	17	1	15
25.0 - 29.9 ....:	2	17	0	17	2	17
30.0 - 34.9 ....:	0	17	0	17	0	17
35.0 - 39.9 ....:	0	17	1	18	1	18
40.0 - 44.9 ....:	0	17	0	18	0	18
45.0 - 49.9 ....:	1	18	0	18	0	18

1/ Returns for raisins converted to fresh basis assuming a 4 to 1 drying ratio.

Table 14.--California raisin, table, and wine grapes: Returns to producers per bearing acre and per ton in crush, fresh-shipment and all uses, averages for selected periods, 1935-60

Period (Crop years)	Returns per bearing acre			Returns per ton								
				All uses			Crush			Fresh-shipment		
	Raisin grapes	Table grapes	Wine grapes	Raisin grapes	Table grapes	Wine grapes	Raisin grapes	Table grapes	Wine grapes	Raisin grapes	Table grapes	Wine grapes
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1935-39.................:	76.58	86.70	49.64	14.54	18.76	15.38	13.94	11.94	14.78	19.98	24.86	17.22
1946-48.................:	351.33	418.67	224.67	50.27	59.87	57.70	47.13	44.37	57.90	66.97	77.63	57.00
1949-60.................:	345.00	309.44	204.61	48.44	47.46	45.05	38.21	31.53	44.58	68.05	64.83	47.84

Table 15.--California raisin, table, and wine grapes sold in crush: Returns per ton to
producers of table and wine grapes as percentage of returns per ton to producers of
raisin grapes, annual and averages for selected periods, 1935-60

Period (crop years)	Raisin grapes	Table grapes	Wine grapes
	Percent	Percent	Percent
1935 ....:	100	57.1	109.5
1936 ....:	100	92.6	98.9
1937 ....:	100	93.0	119.8
1938 ....:	100	100.0	101.0
1939 ....:	100	78.6	99.3
1940 ....:	100	84.6	115.4
1941 ....:	100	90.2	113.4
1942 ....:	100	96.4	98.7
1943 ....:	100	188.5	179.3
1944 ....:	100	198.1	207.4
1945 ....:	100	76.4	112.7
1946 ....:	100	103.7	128.0
1947 ....:	100	87.4	112.2
1948 ....:	100	74.7	119.0
1949 ....:	·100	88.9	117.8
1950 ....:	100	84.2	119.0
1951 ....:	100	73.3	138.0
1952 ....:	100	78.2	128.2
1953 ....:	100	92.0	119.8
1954 ....:	100	82.9	107.5
1955 ....:	100	78.6	119.1
1956 ....:	100	77.9	111.4
1957 ....:	100	85.1	101.3
1958 ....:	100	75.8	96.4
1959 ....:	100	86.8	114.4
1960 ....:	100	85.8	154.4
Average: 1/			
1935-39.............:	100	84.3	105.7
1946-48.............:	100	88.6	119.7
1949-60.............:	100	82.5	118.9

1/ Weighted by quantities sold.

All Uses for Raisin, Table, and Wine Grapes

In comparative returns for all uses combined since World War II, there has been a definite movement in favor of raisin grapes at the expense of table and wine grapes. With returns from raisin grapes as a base of 100, table grapes fell from 129 in 1935-39 to 98 in 1949-60, while wine grapes fell from 105 to 93 (tables 14 and 16). The trend favoring raisin grapes is evident, also, within the period since World War II. Comparing 1949-60 with 1946-48, table grapes fell from 119 to 98 and wine varieties from 109 to 93.

If returns per ton for table and wine grapes for all uses are compared with returns per ton for only those raisin grapes sold as raisins, the movement favoring returns to raisin grapes is accentuated (table 17), because returns from raisins increased somewhat more than returns from other uses of raisin grapes.

The shift of returns in favor of raisin grapes provides a major incentive for a shift in acreage to the raisin variety and for potentially increased supplies of grapes suitable for drying -- provided, as seems likely, that the shift in returns is not due entirely to differences in costs.

Returns Per Acre for Raisin, Table, and Wine Grapes

Comparing the period since World War II with 1935-39 (tables 14 and 18), returns per bearing acre of raisin grapes increased more than for table and wine grapes. Returns per acre for table and wine grapes fell from 114 and 64 percent, respectively, of the returns for raisin varieties in 1935-39 to 91 and 55 percent in 1949-60. In 1946-48, before the Federal raisin marketing order, table grapes maintained the 1935-39 relation with a level of 116 percent, while wine grapes declined to 58 percent.

Raisins and Selected Commodity Groups

Since World War II, returns per ton to producers for raisins have increased substantially more than (1) prices received by farmers for all farm products and all fruits, and (2) wholesale prices of all farm products, all food, and all commodities (table 19). The index of returns per ton for raisins in 1959-60 averaged 52 percent higher than in 1947-49. In comparison, prices received by farmers for all farm products dropped 12 percent and prices received for all fruits were up only 23 percent. At the wholesale level, increases were 5 percent for all food, and 20 percent for all commodities.

PRICES AND MARGINS TO RAISIN PACKERS AND RESELLERS

Annual Farm-Retail Margin on Packaged Seedless Raisins

Description of data.--Data on farm-retail margins after World War II are not comparable with published prewar data. The Bureau of Labor Statistics discontinued its retail price series on raisins in 1939. However, since World War II, retail prices of raisins in New Jersey have been collected monthly by the New Jersey Department of Labor and Industry. Although retail price data for New Jersey do not provide a nationwide indicator of the size of the spread, they represent fairly accurately year-to-year changes in the farm-retail margin. The retail price data for 15-ounce packages have been converted to the equivalent of a full pound at retail. A farm

Table 16.--Returns per ton to producers of California table and wine grapes for all
uses as a percentage of returns per ton in all uses for raisin grapes, annual and
averages for selected periods, 1935-60

Period (crop years)	Raisin grapes	Table grapes	Wine grapes
	Percent	Percent	Percent
1935................:	100	106.9	90.1
1936................:	100	142.1	97.2
1937................:	100	126.0	121.4
1938................:	100	156.1	110.5
1939................:	100	113.7	108.4
1940................:	100	110.1	111.5
1941................:	100	125.5	104.2
1942................:	100	146.1	102.0
1943................:	100	238.3	186.4
1944................:	100	210.3	212.2
1945................:	100	108.0	116.0
1946................:	100	120.3	127.0
1947................:	100	136.9	100.3
1948................:	100	99.7	100.3
1949................:	100	92.0	87.9
1950................:	100	89.2	113.4
1951................:	100	78.2	102.5
1952................:	100	85.0	77.4
1953................:	100	120.9	98.8
1954................:	100	104.5	89.4
1955................:	100	95.1	87.9
1956................:	100	111.6	89.4
1957................:	100	96.6	85.3
1958................:	100	92.8	74.9
1959................:	100	110.4	98.2
1960................:	100	100.2	110.7
Average:			
1935-39...........:	100	129.0	105.5
1946-48...........:	100	119.0	109.2
1949-60...........:	100	98.0	93.0

Table 17.--Returns per ton to producers of California table and wine grapes in all uses
as a percentage of returns for raisin grapes dried, annual and averages for selected
periods, 1935-60

Period (crop years)	Raisin grapes, dried 1/	Table grapes, all uses	Wine grapes, all uses
	Percent	Percent	Percent
1935................:	100	100.4	84.6
1936................:	100	145.4	99.4
1937................:	100	138.9	133.8
1938................:	100	169.5	120.0
1939................:	100	123.1	117.4
1940................:	100	113.2	114.6
1941................:	100	124.3	103.3
1942................:	100	158.2	110.4
1943................:	100	242.9	190.0
1944................:	100	220.0	222.0
1945................:	100	114.3	122.8
1946................:	100	126.3	133.3
1947................:	100	138.2	101.2
1948................:	100	106.0	106.6
1949................:	100	92.6	88.4
1950................:	100	88.8	112.9
1951................:	100	73.9	96.9
1952................:	100	85.9	78.2
1953................:	100	126.8	103.6
1954................:	100	112.2	96.0
1955................:	100	89.5	82.8
1956................:	100	109.6	87.8
1957................:	100	90.9	80.3
1958................:	100	79.9	64.5
1959................:	100	110.4	98.2
1960................:	100	90.7	100.2
Average:			
1935-39...........:	100	135.5	111.0
1946-48...........:	100	123.5	113.7
1949-60...........:	100	95.9	90.8

1/ Returns for raisins converted to fresh basis assuming a 4 to 1 drying ratio.

Table 18.--Returns per bearing acre to producers of California table and wine grapes as a percentage of returns for raisin grapes, annual and averages for selected periods, 1935-60

Period (Crop years)	Raisin grapes	Table grapes	Wine grapes
	Percent	Percent	Percent
1935...................:	100	87.9	55.3
1936...................:	100	140.3	67.8
1937...................:	100	103.8	70.7
1938...................:	100	139.6	67.5
1939...................:	100	99.7	60.1
1940...................:	100	113.6	62.5
1941...................:	100	113.8	52.5
1942...................:	100	135.0	53.3
1943...................:	100	226.9	91.4
1944...................:	100	212.2	119.1
1945...................:	100	102.1	68.1
1946...................:	100	127.5	77.4
1947...................:	100	132.2	44.4
1948...................:	100	88.6	52.8
1949...................:	100	81.5	46.9
1950...................:	100	99.7	62.6
1951...................:	100	83.1	53.9
1952...................:	100	87.8	45.5
1953...................:	100	93.2	52.5
1954...................:	100	110.8	69.5
1955...................:	100	97.9	48.0
1956...................:	100	83.7	50.0
1957...................:	100	90.1	56.1
1958...................:	100	81.1	47.0
1959...................:	100	90.8	59.3
1960...................:	100	87.9	64.6
Average:			
1935-39.............:	100	114.3	64.3
1946-48.............:	100	116.1	58.2
1949-60.............:	100	90.6	54.7

Table 19.--Index numbers of returns per ton to California raisin producers, selected
prices received by U. S. farmers, and selected U. S. wholesale prices, annual and
averages for selected periods, 1935-39 and 1946-60

[1947-49 = 100]

| Year | Raisin returns per ton | Prices received by farmers 1/ | | Wholesale prices | | |
		All farm products	All fruits	Farm products	All food	All commodities
	Index	Index	Index	Index	Index	Index
1935............:	41.8	40.2	48.7	44.0	50.4	52.0
1936............:	52.1	42.1	55.8	45.2	49.4	52.5
1937............:	46.9	45.0	64.0	48.3	51.4	56.1
1938............:	31.4	35.8	39.4	38.3	44.3	51.1
1939............:	36.3	35.1	40.5	36.5	42.3	50.1
1946............:	233.4	87.1	131.4	83.2	78.7	78.7
1947............:	98.8	101.8	101.8	100.0	98.1	96.4
1948............:	100.3	105.9	90.9	107.3	105.7	104.4
1949............:	101.0	92.2	107.3	92.8	96.2	99.2
1950............:	195.3	95.2	106.2	97.5	98.5	103.1
1951............:	125.0	111.4	99.1	113.4	110.3	114.8
1952............:	116.7	106.3	102.9	107.0	108.8	111.6
1953............:	119.0	94.1	107.3	97.0	104.4	110.1
1954............:	130.9	90.8	114.4	95.6	103.6	110.3
1955............:	128.7	85.6	110.6	89.6	101.0	110.7
1956............:	146.6	84.9	117.7	88.4	100.8	114.3
1957............:	197.5	86.7	111.1	90.9	104.0	117.6
1958............:	235.7	92.2	136.3	94.9	109.5	119.2
1959............:	146.6	88.6	116.1	89.1	104.4	119.4
1960............:	157.1	87.8	129.7	88.8	106.0	119.6
Average:						
1935-39......:	41.7	39.6	49.7	42.5	47.6	52.4
1949-56......:	132.90	95.1	108.2	97.7	103.0	109.3
1954-56......:	.135.4	87.1	114.2	91.2	101.8	111.8
1959-60......:	151.8	88.2	122.9	89.0	105.2	119.5
	Percent	Percent	Percent	Percent	Percent	Percent
Increase, 1949-56 over 1935-39......:	218.8	141.6	122.2	129.9	116.4	108.6

1/ Index on 1947-49 base converted from index on 1910-14 base.

weight of 1.06 pounds is roughly equivalent to a pound of raisins at retail. Price data were collected primarily on what the retail trade calls "seedless raisins." These are packaged NTS raisins. The farm value is for the September-August crop year, while the retail value is for the corresponding October-September year. Monthly retail price data show that new-crop farm prices generally are reflected initially in October retail prices. Farm value excludes surplus tonnage under the marketing order, as it was not sold in the domestic market.

Retail prices.--New Jersey retail prices for 15-ounce packages of raisins show a definite plateau between the farm price-peak years of 1946 and 1950, and another between the farm price-peak years 1950 and 1957-58 (fig. 9). In 1947-49, retail prices were stable, averaging 19.9 cents. In 1951-56, retail prices, equally stable, advanced by 19 percent to 23.75 cents. Following the recent price peak of 1958, it appears that a new retail price level somewhat under 30 cents may become established. Retail price peaks have corresponded closely to farm price peaks in 1946, 1950, and 1958. In 1950 and 1958 sharp increases in the margin helped boost retail price peaks. The 1950 retail price peak exceeded the 1947-49 level by 49 percent while the 1958 peak was 56 percent more than the 1951-56 average. In 1960, retail prices at 28 cents per pound were 18 percent more than the 1951-56 average.

Size of farm-retail margin.--Farm-retail margins on 15-ounce packages of seedless raisins during 15 years after World War II, 1946-60, averaged 14.9 cents a pound (table 20). Figure 9 shows three levels in the size of the margin since World War II. In 1946-49, the margin averaged 12.8 cents. From 1950 through 1957, it averaged 14.8 cents, a 16 percent increase over the 1946-49 average. In 1957 it did not rise despite the sharp increase in farm price. However, in 1958, a year of even higher farm prices, the margin showed its first major upturn since 1950, rising to 17.4 cents. In 1959 the margin rose to 19.6 cents, despite the sharp drop in farm price. It is possible that the 1960 level, 16.7 cents, reflects an overdue upward adjustment in the margin.
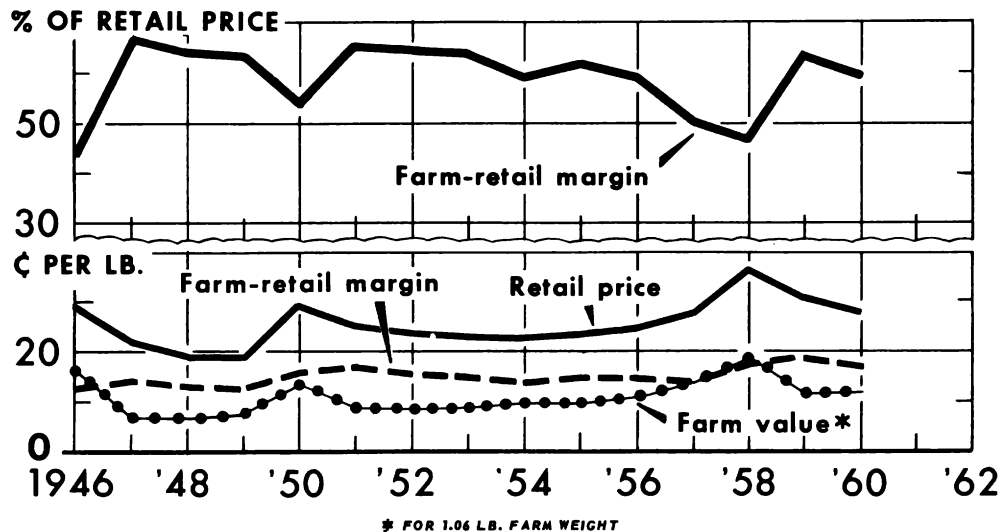
Farm-retail margin and farm value.--The farm-retail margin averaged 58 percent and the farmer's share 42 percent of the retail price over the 15-year period 1946-60. Figure 9 shows that in years of abnormally high farm and retail prices (1946, 1950, 1957, 1958), the margin as a percentage of retail price dropped sharply, to range from 43 to 53 percent. This was because the margin (in cents) showed comparatively sluggish increases (1958 was an exception) in the face of sharply rising farm prices. If the years of abnormally high farm prices are omitted, the margin shows a downward drift, falling from 65 percent of the retail price in 1947-49 to 62 percent in 1951-56, and 1959-60. The increased market power gained by producers under the Federal marketing order may have been partly responsible for the increased percentage of the retail price going to producers during this period.

In comparing changes in the farm-retail margin with changes in farm value, two representative periods are analyzed. The crop years of heavy supplies and relatively depressed farm returns, 1947-49, are compared with 1951-56, a period also of heavy supplies but of uninterrupted pooling under the Federal raisin marketing order. Producers' returns in 1951-56 (9.0 cents) increased by 28 percent over returns in 1947-49 (7.0 cents), while the margin increased by only 15 percent (from 12.9 to 14.8 cents) in the corresponding periods. 10/ Consequently, the percentage of the retail price going to producers tended to increase (from 35.3 to 37.9

_____

10/ If surplus tonnage is included in farm value, the increase in producers' returns falls to 27 percent.

NEW JERSEY RETAIL PRICE, FARM VALUE, AND MARKETING MARGIN

% OF RETAIL PRICE

Farm-retail margin

¢ PER LB.

Farm-retail margin   Retail price

Farm value*

1946 '48   '50   '52   '54   '56   '58   '60   '62

* FOR 1.06 LB. FARM WEIGHT

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Figure 9

percent) while that going to the packers and distributors combined declined (from 64.7 to 62.1 percent).

In summary, the data show clearly that producers' returns outstripped increases in the farm-retail margin, with an associated gain in the producer's share of the retail price. Between 1947-49 and 1959-60 producers' returns increased by 60 percent, while the margin increased by 41 percent.

The extreme variations in the percentage shares from 1946 to 1950 and 1957 to 1959, in contrast to the stability in shares from 1951 to 1956, can be explained in terms of variation of both returns to producers and the margin (fig. 9 and table 21). From 1946 through 1950, returns to producers were much more unstable than the margin (returns to packers and the distributive trade). In 1951-56 the margin was more stable than in the preceding period and, primarily due to the Federal raisin marketing order, unit returns to producers were also about as stable as the margin. As a consequence, year-to-year variations in the respective shares of producers and of packers and distributors were greatly diminished. During 1951-56, the average yearly change in returns to producers was 5.8 percent, compared to 5.1 percent for the margin and 3.1 percent for retail prices (table 21). Thus, the typical pattern of varying annual percentage shares, due to unstable returns at the farm level compared to a relatively stable margin, was obliterated during the period 1951-56. In 1957-59, the pattern of varying annual percentage shares was reestablished as farm prices varied about three times as much as the margin.

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Table 20.--Retail price, farm value, and farm-retail margin for California natural Thompson Seedless raisins in 15-ounce packages, annual and averages for selected periods, 1946-60

Period (crop years)	Retail price per lb. 1/	Farm value for 1.06 lb.		Farm-retail margin per lb.	
		Amount 2/	Share of retail price	Amount 3/	Share of retail price
	Cents	Cents	Percent	Cents	Percent
1946..........	28.99	16.41	56.6	12.58	43.4
1947..........	20.93	7.00	33.4	13.93	66.6
1948..........	19.37	6.93	35.8	12.44	64.2
1949..........	19.37	7.13	36.8	12.24	63.2
1950..........	29.59	13.78	46.6	15.81	53.4
1951..........	25.00	8.61	34.4	16.39	65.6
1952..........	23.57	8.40	35.6	15.17	64.4
1953..........	23.14	8.46	36.6	14.68	63.4
1954..........	22.89	9.38	41.0	13.51	59.0
1955..........	23.43	9.03	38.5	14.40	61.5
1956..........	24.44	10.07	41.2	14.37	58.8
1957..........	27.87	13.93	50.0	13.94	50.0
1958..........	37.02	4/ 19.61	53.0	17.41	47.0
1959..........	30.74	11.10	36.1	19.64	63.9
1960..........	27.98	11.31	40.4	16.67	59.6
Average:5/					
1946-60.......	25.62	10.74	41.9	14.88	58.1
1946-49.....	22.17	9.37	42.3	12.80	57.7
1947-49.....	19.89	7.02	35.3	12.87	64.7
1950-57.....	24.99	10.21	40.9	14.78	59.1
1951-56.....	23.75	8.99	37.9	14.76	62.1
1951-53...	23.90	8.49	35.5	15.41	64.5
1954-56...	23.59	9.49	40.2	14.10	59.8
1957-58.....	32.45	16.77	51.7	15.68	48.3
1959-60.....	29.36	11.20	38.1	18.16	61.9

1/Unweighted annual averages of monthly prices for seedless raisins, October through September. 15-oz. carton prices are converted to equivalent price for 16 oz. Data from "New Jersey Retail Food Prices," N. J. Dept. of Labor and Industry.

2/Farm value is for September-to-August crop year. 1.06 lb. farm weight is equivalent to 1 lb. packed weight. Farm value is based on crop year average returns per ton except that in years of pooling farm value is based only on free tonnage and net returns to producers for reserve tonnage sold as free; value of surplus tonnage is excluded. Data in years of pooling from Raisin Administrative Committee, Fresno, Calif.

3/Retail price minus farm value.

4/Rain-damaged (below standard) NTS raisins in 1958 estimated at 24,000 tons. Handler receipts of NTS raisins (standard grade) were 134,500 tons in 1958. Price per ton for entire 1958 crop ($315.00), when adjusted to reflect standard raisins only is $371.21 per ton, or 19.61 cents per 1.06 lb.

5/Average percentages of retail price for farmer's share and margin derived by dividing average margin (or farm value) by average retail price.

Table 21.--Change from preceding year in retail price, farm value, and farm-retail margin, California natural Thompson Seedless raisins in 15-ounce packages, annual and averages for selected periods, 1947-59 [1]

Period (crop years)	Retail price per lb.		Farm value for 1.06 lb.		Farm-retail margin per lb.	
	Cents	Percent	Cents	Percent	Cents	Percent
1947.................	-8.06	-27.8	-9.41	-57.3	+1.35	+10.7
1948.................	-1.56	- 7.5	-0.07	- 1.0	-1.49	-10.7
1949.................	0	0	+0.20	+ 0.3	-0.20	- 1.6
1950.................	+10.22	+52.8	+6.65	+93.2	+3.57	+29.2
1951.................	-4.59	-15.5	-5.17	-37.5	+0.58	+ 3.7
1952.................	-1.43	- 5.7	-0.21	- 2.4	-1.22	- 7.4
1953.................	-0.43	- 1.8	+0.06	+ 0.7	-0.49	- 3.2
1954.................	-0.25	- 1.1	+0.92	+10.9	-1.17	- 8.0
1955.................	-0.54	- 2.4	-0.35	- 3.7	+0.89	+ 6.6
1956.................	+1.01	+ 4.3	+1.04	+11.5	-0.03	- 0.2
1957.................	+3.43	+14.0	+3.86	+38.3	-0.43	- 3.0
1958.................	+9.15	+32.8	+5.74	+41.2	+3.41	+24.5
1959.................	-6.28	-17.0	-8.57	-43.6	+2.29	+13.2
Average change (signs disregarded):						
1947-51	--	20.7	--	37.9	--	11.2
1952-56.............	--	3.1	--	5.8	--	5.1
1957-59.............	--	21.3	--	41.0	--	13.6

[1] Based on data in table 20.

From 1951 through 1956 (a period of pooling under the order), the decline in the margin enabled increasing unit returns to producers with no increase in New Jersey retail prices. Higher prices to producers in this period were not passed on to consumers. Returns to producers averaged 1.0 cent higher in 1954-56 than in 1951-53 while retail prices declined by 0.3 cent. Thus, the margin declined by 1.3 cents. This is in contrast to the rising trend of unit marketing charges reflected generally in margins over the period 1951-57. In 1957, though retail prices increased as a result of the increase in farm prices, the margin continued the 1951-56 pattern by absorbing the farm price increase without any increase of its own. With the continued farm price increase in 1958, the pattern was broken. Farm prices increased by 5.7 cents, but retail prices advanced by 9.2 cents as a result of a 3.5 cent increase in the margin.

Annual Farm F.O.B. (Packer) Margin

Description of data.--F.o.b. price data on bulk-packed NTS raisins are based on weekly f.o.b. California quotations compiled from California Fruit News. The quotations are on Choice bulk baker Thompson Seedless, except that after September 22, 1951, the quotations are on Select raisins. Crop year averages are developed from monthly averages weighted by bulk-shipments. Producers' prices are crop year average returns per 1.06 pounds (farm weight) of NTS raisins. In years when pooling provisions of the Federal marketing order were operative, producers' returns are on only the tonnage sold as "free"; value of surplus tonnage is excluded.

Size of packer margin.--In the entire postwar period 1946-60, the farm-f.o.b. margin (packer margin) on bulk-packed NTS raisins averaged 2.60 cents a pound, and constituted 19.5 percent of the f.o.b. price (table 22 and fig. 10). The margin (1949-60) adjusted for shipments out of carry-in from the preceding crop year is computed in table 23, column 12, and is shown in figure 10.

Packer margins have shown a steady upward climb from 1946 through 1956. In 1947-49, the margin averaged 1.65 cents. By 1951-56, the margin increased 33 1/3 percent, to 2.20 cents. This increase was somewhat greater than the 28 percent increase in farm value but markedly different from the change in the farm-retail margin on packaged raisins. In the same period the latter margin increased only half as much as the increase in farm value. The unusually high margin in 1958 resulted in part from the additional costs of processing the rain-damaged crop of that year. In 1959-60 the adjusted margin averaged 3.47 cents, an increase of 58 percent over 1951-56. This is in sharp contrast to the 25 percent increase in farm value over the same period.

Stability of packer margins.--Packer margins (adjusted) showed less variation than farm value in the price-peak year of 1950 but more variation in price-peak years 1958 and 1959 (fig. 10 and tables 21 and 23). During the period of volume regulation, returns to producers were more stable than packer margins. In 1952-56, the average yearly change in returns per ton to producers was 5.8 percent (table 21), compared to 12.1 percent (table 23) for packer margins.

Seasonal F.O.B. Prices

Seasonal instability of f.o.b. prices generates unexpected losses and gains to packers and creates uncertainty and lack of confidence on the part of buyers, which, in turn, may depress market demand. Figure 11 clearly indicates that crop years without pooling (volume regulation under the Federal raisin marketing order) and without Government purchasing (1946-47, 1950-51, 1957-58, and 1958-59) have shown highly unstable seasonal f.o.b. bulk raisin prices, in contrast to the marked stability within crop years when pooling occurred. This development is analogous to the impact of the order on seasonal field price stability (fig. 5). In the 1947-48 and 1948-49 crop seasons, Federal Government assistance in the form of heavy purchasing by the Commodity Credit Corporation contributed to seasonal stability in f.o.b. prices.

Table 24 shows the degree to which the f.o.b. bulk raisin price advanced or declined from the opening level. The price in October (typically the opening month in the crop year) is contrasted with both the December and February-March levels.

Table 22.--California bulk-packed natural Thompson Seedless raisins: F.o.b. price per
pound, farm value for 1.06 pounds farm weight, and farm-f.o.b. (packer) margin,
annual and averages for selected crop years, 1946-60

Period (crop years)	F.o.b. price per pound 1/	Farm value per 1.06 lbs. 2/	Farm-f.o.b. margin	
			Actual	As a percentage of f.o.b. price
	Cents	Cents	Cents	Percent
1946................:	18.00	16.41	1.59	9.7
1947................:	8.50	7.00	1.50	17.6
1948................:	8.50	6.93	1.57	18.5
1949................:	9.01	7.13	1.88	20.9
1950................:	15.40	13.78	1.62	10.5
1951................:	10.86	8.61	2.25	20.7
1952................:	10.59	8.40	2.19	20.7
1953................:	10.35	8.46	1.89	18.3
1954................:	11.26	9.38	1.88	16.7
1955................:	11.59	9.03	2.56	22.1
1956................:	12.52	10.07	2.45	19.6
1957................:	17.62	13.93	3.69	20.9
1958................:	26.03	3/ 19.61	6.42	24.7
1959................:	15.05	11.10	3.95	26.2
1960................:	14.86	11.31	3.55	23.9
Average: 4/				
1946-60..........:	13.34	10.74	2.60	19.5
1946-48.........:	11.67	10.11	1.55	13.3
1946-56.........:	11.51	9.56	1.94	16.9
1947-49.........:	8.67	7.02	1.65	19.0
1951-56.........:	11.20	8.99	2.20	19.6
1957-58.........:	21.82	16.77	5.05	23.1
1959-60.........:	14.96	11.20	3.76	25.1

1/ Crop year f.o.b. prices are based on weekly price quotations in "California Fruit
News" for natural Thompson Seedless raisins in 30 lb. bulk containers. Quotations are
for choice bulk before Sept. 22, 1951, and for select bulk thereafter. Unweighted
monthly averages are developed using weekly quotations. Lowest quotations are used if
a range is reported. Monthly averages are weighted by commercial bulk shipments of
previous month to develop crop year average f.o.b. price. F.o.b. data prior to 1949
and system of weighting are from S. W. Shear, Giannini Foundation for Agricultural
Economics, University of California, Berkeley.
2/ 1.06 lbs. farm (natural condition) weight is equivalent to 1 lb. packed weight.
Farm value is based on crop year average returns per ton except that in years of pool-
ing farm value is based only on free tonnage and net returns to producers for reserve
tonnage sold as free; value of surplus tonnage is excluded. Data in years of pooling
from Raisin Administrative Committee, Fresno, Calif.
3/ Rain damaged (below standard) NTS raisins in 1958 estimated at 24,000 tons. Hand-
ler receipts of NTS raisins (standard grade) were 134,500 tons in 1958. Price per ton
for entire 1958 crop ($315.00) when adjusted to reflect standard raisins only is $371.21
per ton or 19.61 cents per 1.06 lbs.
4/ Average percentages derived by dividing average margin by average f.o.b. price.

California Bulk-Packed Natural Thompson Seedless Raisins

FARM VALUE, PACKER F.O.B. PRICE, AND FARM-F.O.B. MARGIN

¢ PER LB.

Packer f.o.b. price

Farm value *

Adjusted farm-f.o.b. margin △

Farm-f.o.b. margin

1946   '48   '50   '52   '54   '56   '58   '60   '62

* FOR 1.06 LB. NATURAL CONDITION WEIGHT   △ ADJUSTED FOR MARGIN ON CARRY IN STOCKS

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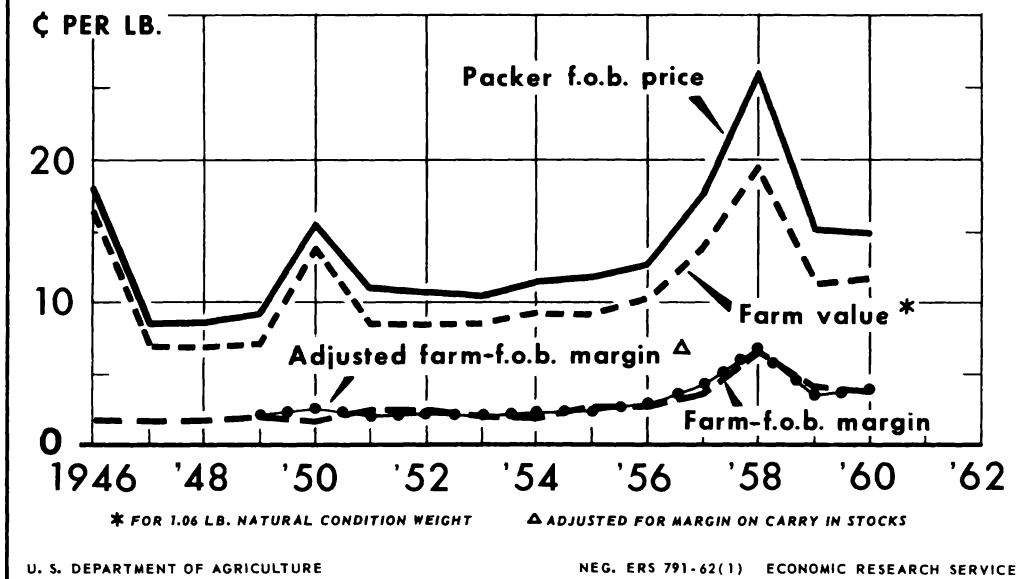
Figure 10

During the latter periods, prices in crop years without volume regulation varied from as much as 24 percent above to 14 percent below the opening price. On the other hand, stability in the 7 years of volume regulation (1949 and 1951-56) is indicated by the fact that the range of variation was from only 4 percent above to 4.1 percent below the general level of opening prices. The comparatively large decline of 12 percent in 1959 was due in large part to the slowness of October f.o.b. prices to adjust from the inordinately high levels of the preceding crop year (see table 25).

F.o.b.-Field Price Spreads

F.o.b.-field price (packer-producer) spreads (October-December average) on bulk-packed NTS raisins have increased 29 percent, from $42 a ton in 1947-49 to $54 in 1951-56 (table 25). The "spread" per ton is defined as the simple difference between the f.o.b. price and the field market price.

F.o.b.-field price spreads have been at their highest levels in crop years (1946, 1950, 1957, and 1958) of high prices, strong demand, relatively short supplies, and absence of volume regulation under the Federal raisin marketing order. In 1946 the October-December spread increased to $75 a ton, or 79 percent more than the 1947-49 average; in 1950 it was $84 a ton, 100 percent more than in 1947-49 (table 25). In 1957 and 1958 the spreads were $66 and $128, 22 and 133 percent above the 1951-56 average. Producer field price increases in 1946, 1950, 1957, and 1958 either exceeded or were comparable to the increase in the spread. It may be inferred that the increase in spread in these years was not at the expense of producer field prices.

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Table 23.--California bulk-packed natural Thompson Seedless raisins: Estimation of farm-f.o.b. margin adjusted for packers' shipments out of carry-in stocks, annual and averages for selected periods, 1949-60

Period (Crop years)	Packers' carry-in September 1, 1/	Bulk shipment percentage, current year 1/	Carry-in applicable to adjust bulk margin 2/	Farm value: preceding year for 1.06 pounds natural condition raisins	F.o.b. price current year	Margin on carry-in 3/	Bulk shipments from carry-in and current-year crop 1/	Bulk shipments from current-year crop	Farm value: current year for 1.06 pounds natural condition raisins 1/ 4/	Margin on shipments: from current-year crop (unadjusted margin)	Adjusted bulk margin 5/	Change in adjusted margin over previous year
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Tons	Percent	Tons	Cents	Cents	Cents	Tons	Tons	Cents	Cents	Cents	Percent
1949........:	15,700	54.1	8,500	6.93	9.01	2.08	77,100	68,600	7.13	1.88	1.90	---
1950........:	16,100	51.7	8,300	7.13	15.40	8.27	64,800	56,500	13.78	1.62	2.47	+30.0
1951........:	11,600	54.3	6,300	13.78	10.86	-2.92	85,500	79,200	8.61	2.25	1.87	-24.3
1952........:	13,300	55.4	7,400	8.61	10.59	1.98	87,100	79,700	8.40	2.19	2.17	+16.0
1953........:	27,000	52.8	14,300	8.40	10.35	1.95	74,700	60,400	8.46	1.89	1.90	-12.4
1954........:	37,700	51.3	19,300	8.46	11.26	2.80	67,900	48,600	9.38	1.88	2.14	+12.6
1955........:	16,800	53.9	9,100	9.38	11.59	2.21	77,200	68,100	9.03	2.56	2.52	+17.7
1956........:	18,400	55.9	10,300	9.03	12.52	3.49	88,300	78,000	10.07	2.45	2.57	+2.0
1957........:	14,100	51.8	7,300	10.07	17.62	7.55	72,700	65,400	13.93	3.69	4.08	+58.7
1958........:	6,900	52.4	3,600	13.93	26.03	12.10	65,000	61,400	19.61	6.42	6.73	+64.9
1959........:	8,700	50.6	4,400	19.61	15.05	-4.56	64,300	59,900	11.10	3.95	3.37	-49.9
1960........:	13,900	51.9	7,200	11.10	14.86	3.76	69,100	61,900	11.31	3.55	3.57	+5.9
Average:												
1951-56...:	---	---	---	---	---	---	---	---	---	---	2.20	---
1952-56...:	---	---	---	---	---	---	---	---	---	---	---	6/ 12.1
1957-59...:	---	---	---	---	---	---	---	---	---	---	---	6/ 57.8
1959-60...:	---	---	---	---	---	---	---	---	---	---	3.47	---

1/ Free (commercial) tonnage only (excludes pooled tonnage), packed weight basis.
2/ Column (3) times column (2).
3/ Column (6) minus column (5).
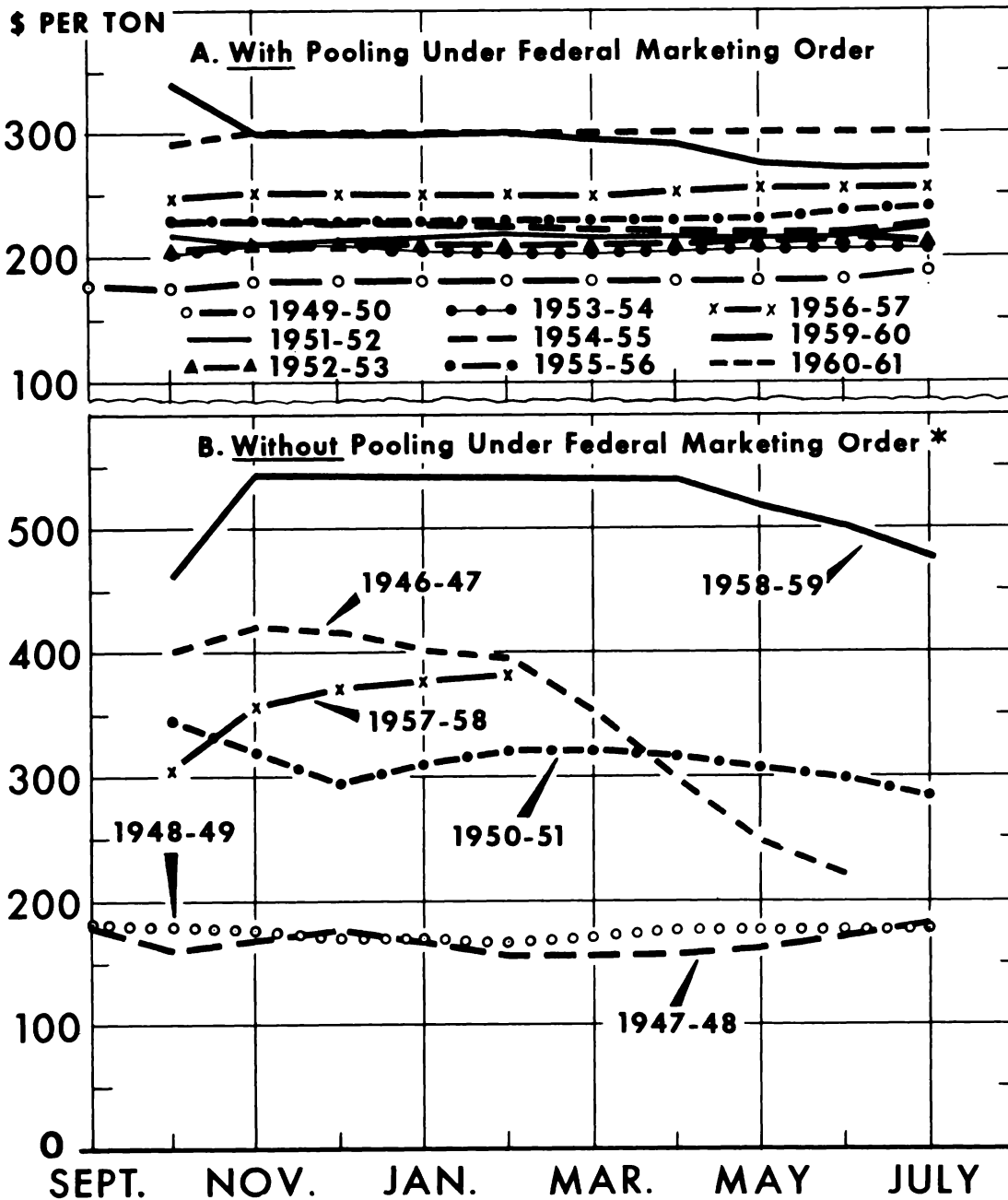4/ Column (8) minus column (4).
5/ Average of column (7) and column (11) weighted by columns (4) and (9) respectively.
6/ Signs disregarded.

Data on carry-in, and bulk shipments from Raisin Administrative Committee, Fresno, Calif.

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Figure 11

Table 24.--California bulk-packed natural Thompson Seedless raisins: F. o. b. price change from October to December, and to February-March, selected crop years, 1946-60

Crop year	F.o.b. price change as a percentage of October price	
	December	February-March
	Percent	Percent
Without pooling: 1/		
1946 ....:	+3.8	-6.6
1950 ....:	-14.2	-7.3
1957 ....:	+20.9	+24.2
1958 ....:	+17.4	+17.4
With pooling:		
1949 ....:	+4.0	+4.0
1951 ....:	-2.3	-0.2
1952 ....:	+2.4	+2.4
1953 ....:	+4.0	0
1954 ....:	-3.9	-4.1
1955 ....:	0	0
1956 ....:	+2.0	+2.0
1959 ....:	-11.8	-12.5
1960 ....:	+3.4	+3.4

1/ Except 1947 and 1948, featured by heavy C.C.C. purchases.
Based on data from table 25.

The data in table 26 and figure 12 show a definite seasonal pattern of decline in the f.o.b.-field price spreads in crop years with pooling provisions aimed at raising prices under the Federal raisin marketing order. The decrease in the spread averaged 9 percent for the years shown in table 26.

RAISIN PACKERS, 1949-57

Nature of Packer Adjustments: Implications for Returns

Packer margins per unit of bulk-packed NTS raisins sold in commercial channels increased 33 1/3 percent from 1947-49 to 1951-56. F.o.b.-field price spreads (as calculated in the preceding section) through 1957 also support this finding. On the basis of the competitive structure of the industry it appears safe to assume that the margin per unit of packaged raisins has also increased about a third. However, gross returns to packers depend on volume handled as well as unit margins. The salient issue, then, is the degree to which the decline in raisin production and in volume handled by packers has offset the increases in margins per unit. This issue was resolved largely by packers going out of business (or merging) during 1949-57, with exits concentrated among smaller firms. Consequently, the pressure of declining total industry volume on the packers remaining in business was dissipated. Actually, these packers registered increases in volumes. It can be concluded, therefore, that the total gross returns of remaining packers were even more favorable than that indicated by the increase of one-third in unit margins for bulk-packed raisins.

Table 25.--Monthly averages of California field market and f.o.b. prices for natural Thompson Seedless raisins, price spread per ton, and average price spread peak months (Oct., Nov., Dec.), crop years 1946-60 [1]/

Period	1946 Field market price per ton	1946 F.o.b. price per ton, bulk packed	1946 Price spread per ton	1947 Field market price per ton	1947 F.o.b. price per ton, bulk packed	1947 Price spread per ton	1948 Field market price per ton	1948 F.o.b. price per ton, bulk packed	1948 Price spread per ton	1949 Field market price per ton	1949 F.o.b. price per ton, bulk packed	1949 Price spread per ton	1950 Field market price per ton	1950 F.o.b. price per ton, bulk packed	1950 Price spread per ton
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
September	306	--	--	132	177	45	130	180	50	130	175	45	264	--	--
October	324	400	76	118	157	39	130	178	48	130	173	43	--	345	--
November	2/345	420	75	133	--	--	130	174	44	139	178	39	221	318	97
December	--	415	--	131	176	45	130	170	40	140	180	40	225	296	71
January	--	400	--	113	164	51	--	169	--	140	180	40	240	310	70
February	--	395	--	113	156	43	121	165	44	140	180	40	250	320	70
March	--	352	--	114	155	41	132	169	37	140	180	40	250	320	70
April	--	296	--	111	155	44	--	175	--	--	180	--	--	315	--
May	--	244	--	120	160	40	--	175	--	--	180	--	--	306	--
June	--	219	--	131	170	39	--	175	--	--	181	--	--	297	--
July	--	--	--	--	179	--	--	175	--	--	190	--	--	263	--
August	140	245	105	--	190	--	--	175	--	210	195	--	--	248	--
Average price spread, peak months (Oct., Nov., Dec.) 4/	--	--	3/ 75	--	--	3/ 42	--	--	44	--	--	41	--	--	3/ 84

Period	1951 Field market price per ton	1951 F.o.b. price per ton, bulk packed	1951 Price spread per ton	1952 Field market price per ton	1952 F.o.b. price per ton, bulk packed	1952 Price spread per ton	1953 Field market price per ton	1953 F.o.b. price per ton, bulk packed	1953 Price spread per ton	1954 Field market price per ton	1954 F.o.b. price per ton, bulk packed	1954 Price spread per ton	1955 Field market price per ton	1955 F.o.b. price per ton, bulk packed	1955 Price spread per ton
September	--	227	--	--	230	--	--	210	--	--	228	--	--	230	--
October	160	218	58	151	205	54	157	202	45	180	230	50	163	230	67
November	160	210	50	156	210	54	160	210	50	176	230	54	170	230	60
December	166	213	47	164	210	46	160	210	50	175	228	53	170	230	60
January	169	215	46	165	210	45	160	206	46	175	224	49	170	230	60
February	171	219	48	165	210	45	155	202	47	173	221	48	--	230	--
March	170	216	46	165	210	45	162	202	40	174	220	46	--	230	--
April	170	215	45	165	210	45	163	205	42	175	220	45	--	230	--
May	--	215	--	--	214	--	163	205	42	175	220	45	--	230	--
June	--	216	--	--	215	--	--	205	--	176	220	44	--	234	--
July	--	223	--	--	212	--	--	205	--	--	224	--	--	240	--
August	--	228	--	--	210	--	--	216	--	--	228	--	--	240	--
Average price spread, peak months (Oct., Nov., Dec.) 4/	--	--	52	--	--	51	--	--	48	--	--	52	--	--	62

Period	1956 Field market price per ton	1956 F.o.b. price per ton, bulk packed	1956 Price spread per ton	1957 Field market price per ton	1957 F.o.b. price per ton, bulk packed	1957 Price spread per ton	1958 Field market price per ton	1958 F.o.b. price per ton, bulk packed	1958 Price spread per ton	1959 Field market price per ton	1959 F.o.b. price per ton, bulk packed	1959 Price spread per ton	1960 Field market price per ton	1960 F.o.b. price per ton, bulk packed	1960 Price spread per ton
September	--	240	--	--	255	--	--	--	--	--	400	--	--	280	--
October	186	245	59	260	306	46	360	460	100	210	340	130	210	290	80
November	191	250	59	280	354	74	400	540	140	210	300	90	210	300	90
December	191	250	59	293	370	77	400	540	140	210	300	90	212	300	88
January	190	250	60	298	375	77	412	540	128	210	300	90	211	300	89
February	190	250	60	--	380	--	--	540	--	200	300	100	--	300	--
March	192	250	58	--	380	--	--	540	--	200	295	95	--	300	--
April	199	252	53	--	380	--	--	540	--	200	290	90	--	300	--
May	199	255	56	--	410	--	--	516	--	202	275	73	--	300	--
June	--	255	--	--	--	--	--	500	--	--	270	--	--	300	--
July	--	255	--	--	--	--	--	475	--	--	270	--	--	300	--
August	--	255	--	--	--	--	--	400	--	--	272	--	--	300	--
Average price spread, peak months (Oct., Nov., Dec.) 4/	--	--	59	--	--	66	--	--	127	--	--	103	--	--	66

1/ F.o.b. prices, quoted on a cents per pound basis, are multiplied by 2,000 to convert to dollars per ton basis. See also, footnote 1, table 22. Field market prices are for natural condition weight, and are simple averages of weekly quotations. In years of pooling, quotations are for free tonnage only.

2/ Oct. 30 through Nov. 8.

3/ Two months only included.

4/ In 1947-49, the Oct.-Dec. price spread averaged $42; in 1951-56 it averaged $54.

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Table 26.--Seasonal change in f.o.b.-field price spread on bulk-packed natural Thompson Seedless raisins, selected years, 1949-60 1/

Crop years with volume regulation (pooling)	F.o.b. - field price spread		
	First 3 months of crop year	Last 3 months of crop year	Change as a percentage of first 3 months
	Dollars per ton	Dollars per ton	Percent
1949...............:	42.33	40.00	-5.5
1951...............:	51.67	46.33	-10.3
1952...............:	51.33	45.00	-12.3
1953...............:	48.33	41.33	-14.5
1954...............:	52.33	44.67	-14.6
1955...............:	2/ 63.50	3/ 60.00	-5.5
1956...............:	59.00	55.67	-5.6
1959...............:	103.33	86.00	-16.8
1960...............:	2/ 85.00	3/ 88.50	+4.1

1/ First and last three months of crop year refer to months where quoted field and f.o.b. prices furnish data for computing spreads (see table 25). See also footnote 1, table 22.
2/ First 2 months only.
3/ Last 2 months only.

Large packers as a group increased their share of industry volume handled; the share of small packers declined sharply while the share of medium-sized packers showed a much smaller decline. However, in terms of individual firms remaining in business at the end of 1957 (as contrasted to the group comparisons), gains by the remaining individual small packers were about double those to the remaining medium and large packers.

Changes in Total Volume and in Number and Size of Packers

The decline in raisin production in 1949-57 (fig. 3) has been matched by a decline of 10.3 percent from 1949-51 to 1955-57 (table 27) in total volume of raisins handled by packers.

The number of commercial packers in business showed a drastic decline of about one-third, from 32 firms in 1949 to 21 by the end of the 1957 crop year (table 27). The net decline of 11 firms resulted from 13 firms going out of business (or merging), partly offset by 2 entrants (table 28). The net decline in numbers was concentrated among small and medium handlers. These two groups declined from 19 to 11 and from 9 to 6 firms, respectively. 11/ The group of large firms remained stable at

11/ The "large" category consists of firms each handling 6 percent or more of all raisins acquired by the industry in a given crop year. The "medium" group consists of firms each with from 2 to 5.99 percent of the industry total; and the "small" group consists of firms each handling less than 2 percent of the industry total. In 1949-51 the average tonnages handled per firm in each size group were: Large, 33,279; medium, 6,297; and small, 1,888. The large firms, on the average, were 5 times the size of medium firms, while medium firms were approximately 3 times the size of small firms.

California Bulk-Packed Natural Thompson Seedless Raisins

SEASONAL CHANGE IN MONTHLY FIELD – F.O.B. PRICE SPREAD

$ PER TON

Years With Pooling Under Federal Marketing Order

●●●● 1949-50	x—x 1953-54	●—● 1956-57
—— 1951-52	△—△ 1954-55	—— 1959-60
○○○○ 1952-53	— — 1955-56	- - - 1960-61

SEPT.   NOV.   JAN.   MAR.   MAY   JULY

U. S. DEPARTMENT OF AGRICULTURE   NEG. ERS 793-62(1)   ECONOMIC RESEARCH SERVICE
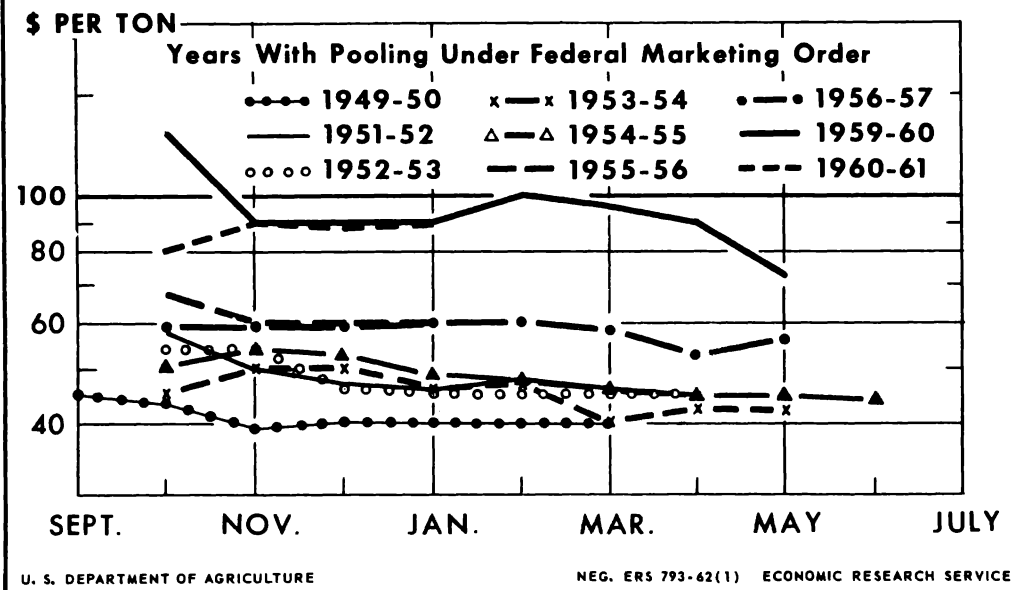
Figure 12

four members, since one firm that grew from medium to large offset the single exit from business in this group during the 1957 crop season. Exits through 1957 as a percentage of firms in business in 1949 were as follows, by size: Large, 25 percent; medium, 33 percent; small, 47 percent. No new packer of substantial size entered the raisin industry. The two firms that entered the business were small ones. No firms decreased in size enough to be reclassified, but one firm grew from small to medium, another from medium to large.

Large, Medium, and Small Packers: Changes in Volume Handled and Share in Packers' Total Returns

The share of each size group of packers in total volume of raisins handled is roughly proportionate to its share in total returns. The major qualification is that data on volumes handled understate the share in returns of the large firms and over-state that of the small group. This is because large firms produce more of the higher-valued packaged raisins than small firms. The degree of change in share of returns is more accurately reflected by changes in volume, because the proportion of packaged to total raisins handled in each size group appears to have been relatively stable in the period studied.

Large packers increased their physical volume handled between 1949-51 and 1955-57 by 6.5 percent, in the face of the industrywide decline of 10.3 percent, and increased their share of the industry's volume from 61 to 72 percent (table 27).

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Table 27.--Number of packers of California raisins, all varieties, and quantities acquired by large, medium, and small packers, annual and averages for selected periods, 1949-57. 1/

Period (crop years)	All packers			Large packers			Medium packers			Small packers		
	Number of firms	Acquisitions		Number of firms	Acquisitions		Number of firms	Acquisitions		Number of firms	Acquisitions	
	Firms	Tons	Percent	Firms	Tons	Percent	Firms	Tons	Percent	Firms	Tons	Percent
1949 ....:	32	258,061	100	4	155,213	60.2	9	60,254	23.3	19	42,594	16.5
1950 ....:	30	155,453	100	4	91,273	58.7	8	43,037	27.7	18	21,143	13.6
1951 ....:	28	243,364	100	4	152,871	62.8	8	54,535	22.4	16	35,958	14.8
1952 ....:	28	287,681	100	4	177,251	61.6	8	60,366	21.0	16	50,064	17.4
1953 ....:	28	232,415	100	4	144,576	62.2	8	58,038	25.0	16	29,801	12.8
1954 ....:	26	167,905	100	5	126,604	75.4	6	25,856	15.4	15	15,445	9.2
1955 ....:	23	225,565	100	5	164,155	72.8	6	34,847	15.4	12	26,563	11.8
1956 ....:	23	200,231	100	5	143,064	71.5	6	44,719	22.3	12	12,448	6.2
1957 ....:	2/22	163,627	100	2/5	118,332	72.3	6	32,015	19.6	3/11	13,280	8.1
Average:												
1949-51............:	30	218,959	100	4	133,119	60.8	4/8	52,609	24.0	4/18	33,232	15.2
1955-57............:	4/23	196,474	100	5	141,850	72.2	6	37,194	18.9	4/12	17,430	8.9

1/ Large packers include firms each having 6 percent or more of total industry acquisitions in a given year; medium packers, 2-5.99 percent; small packers, under 2 percent. This classification is made each crop year, therefore, firms may change classification due to change in size. One medium firm grew to large in 1954; one small firm grew to medium in 1956. Minor yearly variations by firms among size groups have been eliminated.

2/ Includes one packer who went out of business during crop year.

3/ Excludes one noncommercial packer.

4/ Median number of firms.

Data from Raisin Administration Committee, Fresno, Calif.

Table 28.--Number of large, medium, and small packers leaving or entering California raisin industry, 1949-57 1/ 2/

Period (crop years)	All packers			Large packers				
	Total firms in business	Exit from business	Entry into business	Total firms in business	Exit from business	Entry into business	Intergroup transfers In	Intergroup transfers Out
1949	32	0	0	4	0	0	0	0
1950	30	2	0	4	0	0	0	0
1951	28	2	0	4	0	0	0	0
1952	28	0	0	4	0	0	0	0
1953	28	0	0	4	0	0	0	0
1954	26	2	0	5	0	0	3/ 1	0
1955	23	3	0	5	0	0	0	0
1956	23	2	2	5	0	0	0	0
1957	5/ 6/22	8/2	0	5/ 5	7/ 1	0	0	0
Total	--	13	2	--	1	0	1	0

Period (crop years)	Medium packers					Small packers				
	Total firms in business	Exit from business	Entry into business	Intergroup transfers In	Intergroup transfers Out	Total firms in business	Exit from business	Entry into business	Intergroup transfers In	Intergroup transfers Out
1949	9	0	0	0	0	19	0	0	0	0
1950	8	1	0	0	0	18	1	0	0	0
1951	8	0	0	0	0	16	2	0	0	0
1952	8	0	0	0	0	16	0	0	0	0
1953	8	0	0	0	0	16	0	0	0	0
1954	6	1	0	0	3/ 1	15	1	0	0	0
1955	6	0	0	0	0	12	3	0	0	0
1956	6	1	0	4/ 1	0	12	1	2	0	4/ 1
1957	6	0	0	0	0	6/ 11	1	0	0	0
Total	--	3	0	1	1	--	9	2	0	1

1/ All exits are prior to crop year unless otherwise noted, and do not reflect acquisitions in crop year in which exit is noted. Some exits were mergers.
2/ See footnote 1, table 27.
3/ One firm grew in size from Medium to Large.
4/ One firm grew in size from Small to Medium.
5/ Includes one packer who went out of business during crop year.
6/ Excludes noncommercial packers.
7/ Exit during crop year following acquisition of tonnage.
8/ One of the firms going out of business is counted in total firms in business because the firm operated and acquired tonnage for part of the crop year.

Data from Raisin Administrative Committee, Fresno, Calif.

Both the medium and small groups showed a substantial decline in volume handled, the medium group down 29.3 percent and the small group down 47.5 percent. The industry share of the medium group fell from 24 to 19 percent, while that of the small group fell from 15 to 9 percent.

If the classification of packers into size groups is frozen as of 1949, the impact on group shares of the growth to the next higher size group of one medium and one small packer is eliminated. (For example, some of the gains in the large group are due to the growth of a medium firm, with its volume added to the large category and subtracted from the medium group.) On this basis, the relative gains of the large group are reduced, and the losses of the medium and small group also are diminished.

Changes in Volumes Handled by Packers Remaining in Business, 1949-57

Packers who left the raisin business, or merged with other firms, in effect reduced their firms' volumes and income from raisins to zero. What happened to the volume handled and gross returns of packing firms who were in business in 1949 and remained at the end of the 1957 crop year?

Table 29 is based on data which segregate the volumes handled by the 20 raisin packers who were in business during the whole period. The packing firms are classified as large, medium, and small as of 1949, and are frozen in these classes irrespective of growth. In this way, the identity of the packers in each size group is maintained throughout the period. Total volume handled by all these packers increased 17.5 percent from 1949-51 to 1955-57 in the face of the 10 percent decline for the entire industry. (Some of the growth is the result of mergers.) Small firms showed the largest percentage increase, 33.7 percent (the highest mortality rate of firms also was in the small group). The 17 percent increase in volumes handled by medium packers was slightly greater than that of the large packers. The figures are averages for each group, and do not show the variations for individual firms within each group. However, of the 20 firms involved, 18 showed increases in their shares of the industry's total volume, while 15 of the 20 showed actual increases in physical volume handled; all the exceptions to increased shares and volumes were confined to small packers (table 29).

Within the medium and small groups, the firms handling the largest volumes (as of 1955-57) showed substantially greater increases than the other firms in the two groups. The three largest medium firms showed an increase in volume handled of 22.3 percent, compared to an increase of 12.4 percent for other medium firms remaining in business. The three largest small packers showed an increase of 114 percent, compared to an increase of only 4.4 percent for other small packers.

Parallelism and Significance of Adjustments by Packers and Producers

The preceding section has shown that exits of packers from the raisin industry helped to dissipate the pressure of declining total volume on packers' gross returns; that in 1955-57, total gross returns to remaining packers increased as a result of increases in both unit margins and volumes handled by individual packers. A somewhat parallel situation existed for raisin producers. The pressure of the 1949 level of production on unit prices was dissipated in part by the exit of raisin growers from the industry. Remaining raisin producers received higher unit and total gross returns.

Table 29.--California raisins, all varieties: Acquisitions by all packers remaining in business 1949 through end of 1957, by size groups and three largest packers within groups, averages, crop years 1949-51 and 1955-57

Packer size group, as of 1949-51 1/	Number of packers in business 1949 through end of 1957	Comparison of 1955-57 with 1949-51			
		Percentage change in acquisitions by--		Number of packers with--	
		All packers	Three largest packers in each size group 2/	Increase in percentage share of total industry acquisitions	Increase in physical volume of acquisitions
	Number	Percent	Percent	Number	Number
Large................:	3	+15.3	--	3	3
Medium..............:	6	+17.0	+22.3	6	6
Small...............:	11	+33.7	+114.1	9	6
Total, packers in business,1949-57 3/	20	+17.5	--	18	15

1/See footnote 1, table 27. Note, however, that the classification used in this table freezes firms in their size groups as of 1949-51.
2/ As of 1955-57.
3/ For the packing industry as a whole (includes packers who went out of business in 1949-57 as well as those remaining in business, 1949-57),acquisitions in 1955-57 were 10.3 percent less than in 1949-51.

Data from Raisin Administrative Committee, Fresno, Calif.

The decline in number of packing firms and volume handled was concentrated among small and medium-size firms, with associated increases in the percentage of volume handled by large packers. Similarly, the decline in the number of raisin producers and production was centered mainly among smaller producers, with a resultant increased concentration of remaining production among larger producers.

The decline in packers and producers constitutes a decline in income recipients in the raisin industry, as well as a decline in productive capacity. Consequently, the increased returns were shared among fewer recipients, at both packer and producer levels. Had the exits of producing and packing firms not occurred, the additional supplies (and capacity) would have reduced returns per firm.

The part of the increase in returns that is due to the exit of firms and producing capacity tends to defer the impact of potentially adverse forces external to the industry (for example, long-term declines in demand). The situation tends to create vulnerability for the industry. The increased income of individual firms tends to prevent the industry from reacting vigorously to (or perhaps even recognizing) external forces which, unless the exits continue, might have an adverse effect on income. Moreover, few exits of producers and packers can be expected in the present "hard core" of raisin firms.